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The Department of Energy's FY 1998 Congressional budget highlights, budget justifications, and other supporting documents will be available on the CFO homepage at http://www.cfo.doe.gov/budget/98budget.htm

Budget Highlights and Performance Plan

Introduction

The Department's FY 1998 budget departs significantly from previous submissions. This request proposes additional budget authority to accommodate two new financing changes, and incorporates performance based budgeting.

The request for additional budget authority allows the Department to change the way in which construction projects are budgeted and expand a privatization pilot program begun last year. This request includes full up-front funding of amounts needed to complete construction projects, rather than the previous approach of requesting only incremental construction funds proposed to be spent in the fiscal year. Also proposed is the expansion of an innovative privatization program in which the private sector brings its own capital to build cleanup facilities or deactivate DOE facilities that will reduce costs for several key environmental projects.

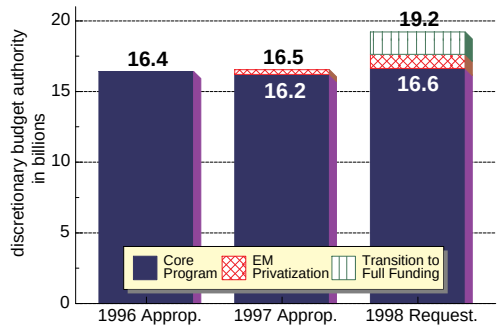
Unlike previous budget submissions, this request incorporates a preliminary Performance Plan. It was developed as a performance based budget implementing the Department's move to a strategic planning process, begun in 1993, and in anticipation of performance based budget requirements in accordance with the Government Performance and Results Act.

By incorporating these concepts of results-oriented budgeting, up-front construction funding, and expansion of a privatization initiative, the Department's FY 1998 request delivers on the President's promise to achieve a "cheaper, smaller government that works better, too."

A New Element Added to the Budget Request

The Department of Energy's FY 1998 budget request for discretionary authority of $19.2 billion is $2.7 billion above the FY 1997 level. Nearly all of the increase ($2.3 billion) above FY 1997 is the result of two changes in how construction projects are financed. The first increase ($1.6 billion) is a result of how the funds for construction projects are requested. Another increase ($0.7 billion) results from the $1.0 billion FY 1998 request for the Environmental Management privatization program started by the Congress in FY 1997. All other Departmental programs total $16.6 billion in FY 1998, a $0.4 billion increase over the FY 1997 comparable level.

Department of Energy Funding



Treatment of Construction Costs

Starting in the FY 1998 budget, the Department will adopt procedures currently used in most other agencies that require full up-front funding of construction projects, rather than requesting the funds incrementally each year. These changes require that $1.6 billion in budget authority be requested in FY 1998. This new approach requests full, up-front authority for the total cost of multi-year construction projects. It is not an increase from previous construction plans and does not change the rate of

construction or the way projects were originally intended to be executed. The actual expenditures, or outlays, will occur as originally planned for FY 1998 and beyond.

Full construction funding solves two problems created by incremental project funding. Often Federal construction projects begin with a small request which may not reflect the government's real obligation to be paid down the line. The full funding approach will allow the Administration and the Congress to decide on the merits of a project knowing its associated full costs. Requesting total expected costs, up front, enables more efficient management with fewer construction starts, stops and delays. Further, it makes it easier to hold project managers accountable for delivering completed construction projects on schedule and within their original estimated cost.

Privatization Initiative

In FY 1997, with a $330.0 million appropriation from the Congress, the Department initiated a pilot program to radically change the approach to the cleanup of nuclear materials. Additional budget authority of $1.0 billion, is requested to expand this privatization initiative in FY 1998.

For these projects, the Department contracts with private parties who construct facilities to deliver cleanup services in later years when the Department will pay for the services. The budget authority serves as "good faith" of the government's intention to pay for services delivered at a later date and provides assurance of government funding if it should cancel a project before the services are provided. Without this authority, the government could not enter into long-term contracts with the private sector for them to assume the responsibility to develop, finance, and construct facilities to process nuclear waste materials into a form suitable for storage and disposal. This privatized approach is also being applied to other key cleanup projects including deactivation and decommissioning of nuclear facilities that are costly to maintain.

Once facilities are constructed and able to provide servicesto the government's specifications, generally estimated to take five to seven years after the project is approved, the Department will pay for the services as they are completed. Although the privatization funds are required to proceed with the contracts, outlays will not result until later fiscal years when the private sector delivers the services. Privatization should speed up completion of these projects, ultimately reducing their overall costs. Privatization also gets the government out of a portion of the construction and facility management business, and further benefits taxpayers because the private sector assumes the risk and responsibility for construction of these facilities and their efficient operation.

Performance Based Budgeting

This year's budget request also contains the Department's FY 1998 preliminary Performance Plan.

The Government Performance and Results Act (GPRA), passed in 1993, requires that budgets be the outcome of a strategic planning process, containing performance-based results for proposed spending requests, beginning with the FY 1999 budget submission. At the Department of Energy, strategic planning and performance-based budgeting has been underway since the beginning of the Clinton Administration. By stressing these disciplines over the past four years, we are able to provide the Congress, a year in advance of the

legislated requirement, a budget that begins to implement the provisions of GPRA and manages for results.

The Department's FY 1998 Budget was developed as part of a Strategic Management Process linking objectives from the ongoing strategic planning process to performance-based planning and budget proposals. Decisions on how to invest taxpayer money were based on which programs best delivered results to the American peoples and most effectively accomplished the President's strategic objectives. The results of this process have been incorporated into the Department of Energy's FY 1998 Budget Request. The Department will continue to work with the Office of Management and Budget to develop meaningful performance measures for the FY 1999 budget submission.

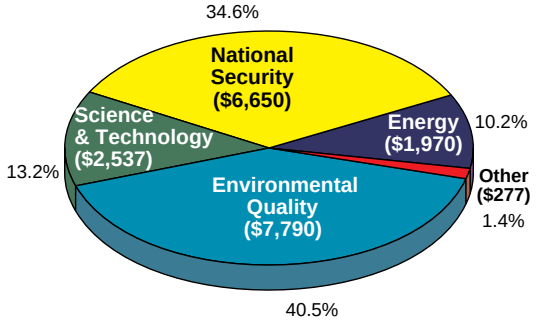
The FY 1998 Budget: Serving the Department's Core Missions

At the beginning of the Clinton Administration, the Department initiated changes in the way we do business. Recognizing that taxpayers now expect more from government programs and hold agencies more accountable for superior results with fewer resources, we now measure program performance from the customer's perspective. The emphasis is on results. We have defined our mission, set a vision and key goals, and have organized our programs into business lines that best position the Department to serve the core mission statement which reads:

> The Department of Energy, in partnership with our customers, is entrusted to contribute to the welfare of the Nation by providing the technical information and scientific and educational foundation for the technology, policy, and institutional leadership necessary to achieve efficiency in energy use, diversity in energy sources, a more productive and competitive economy, improved environmental quality, and a secure national defense.

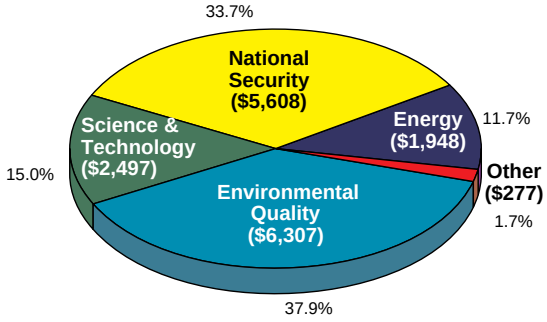
The Department's programs are organized along components of this mission, reflected in the business lines: Energy, National Security, Environmental Quality, and Science and Technology.

Total Request by Business Line



Total DOE Discretionary Request: $19,223 million

Core Programs by Business Line



Total DOE Core Programs: $16,637 million

The Department has established five key goals that drove all the strategic planning and budgeting decisions made in the development of the FY 1998 budget request. These key goals are:

- Develop and promote clean, efficient energy technologies and enhance energy security.
- Reduce the global nuclear danger.

- Restore, stabilize, protect, and enhance the environment.
- Leverage the Department's unique science and technology capabilities to provide knowledge that drives the Nation's future.
- Stimulate U.S. economic productivity.

Strategic Objectives: Investments for a Better Future

Our FY 1998 budget continues the Department's commitment to deliver results. We propose program investments that not only generate immediate benefits, but through our significant strength in technology, set the stage for important developments for future generations. This budget request was formulated as a performance plan to accomplish the following strategic objectives:

Energy Resources

- Ensure secure supplies of clean, affordable energy resources through research and development, maintenance of the Strategic Petroleum Reserve, and reduction of adverse environmental impacts associated with energy production, delivery, and use.

National Security

- Provide the technical foundation and path-breaking science to ensure the safety and reliability of the nuclear weapons arsenal without underground testing that supports a Comprehensive Test Ban Treaty.
- Stem the international spread of nuclear weapons materials and ensure the safety of nuclear power plants and other sites in Russia, and other former Soviet States.

Environmental Quality

- Make real progress in the disposal of civilian and military nuclear spent fuel and high-level waste.
- Continue to improve the efficiency and effectiveness of the cleanup of former nuclear weapons production sites.

Science and Technology

- Preserve our Nation's scientific leadership and strengthen our economic competitiveness through the enhanced and efficient use of vast scientific resources available in our National Laboratories, university laboratories, and private industry.

Accomplishment of these objectives is essential for the Nation's continued vitality as we move into the next century. We take these commitments seriously and have focused our resource planning to deliver on these objectives. These objectives drive the allocation decisions reflected in the Department's FY 1998 budget request. They are also the template against which each and every program is measured before decisions are made on appropriate funding levels. In short, the strategic objectives, and their accomplishment, are the basis by which we are prepared to be measured as a Federal agency. The FY 1998 budget represents the policy objectives and associated deliverables that can, and will, be used by the President, Congress and the American people to judge the performance of the Department of Energy.

Energy Resources: Secure Supplies of Clean, Affordable, Energy

Energy Resources

Helping guard against energy supply disruptions and their associated threats to the United States remains a fundamental priority of the Department of Energy. To achieve these goals, the Department continues its pursuit of energy technology development, and the market penetration of these technologies. Our energy technology program recognizes the need to maximize energy productivity, strengthen and improve living standards, prevent pollution and reduce the adverse environmental impacts associated with energy production, delivery and use. The key energy resource objectives driving the Department's FY 1998 budget request include:

- Reducing U.S. vulnerability to energy supply disruptions;
- Developing renewable domestic energy;
- Designing and delivering cars of the future;
- Improving efficiency in energy intensive industries;
- Implementing the Climate Change Action Plan;
- Fostering energy efficient buildings and communities for the 21st Century;
- Increasing U.S. energy technology exports and investments;
- Boosting the Nation's production of natural gas and oil;
- Providing a new option to supplement the Nation's liquid fuels;
- Developing the clean, high efficiency power plant for the 21st Century;
- Maximizing the value of Federal oil fields;
- Developing technologies that will use coal in increasingly economic and environmentally desireable ways;
- Developing technologies to address the aging of nuclear power plants;
- Developing technologies to reduce the generation of spent nuclear fuel;
- Ensuring the availability of isotopes for industry, research, and health care;
- Providing radioisotope power systems for U.S. space exploration;
- Operating DOE test and research reactors safely and effectively.

Energy Resources Overview

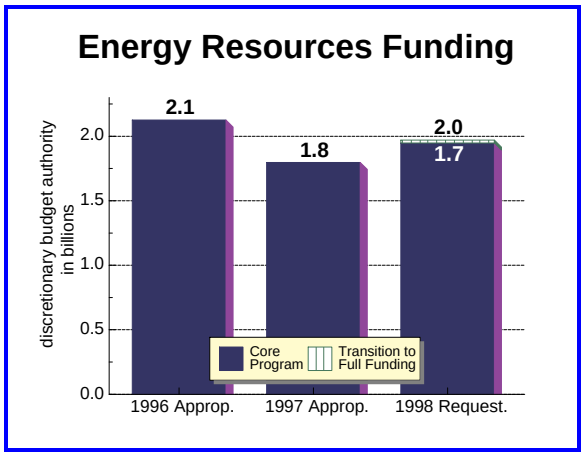
The Department's energy resource programs are budgeted in two separate appropriations bills, Energy and Water Development and Interior and Related Agencies. The Department's energy efficiency programs are funded in the Energy Conservation account within the Interior and Related Agencies Appropriations. Solar and Renewable Energy Programs are funded in the Energy Supply Research and Development account within the Energy and Water Development Appropriations.

All programs managed by the Office of Fossil Energy, including the Naval Petroleum Reserves, the Strategic Petroleum Reserves, and the Clean Coal Technology Program, are funded within the Interior and Related Agencies Appropriation.

The civilian programs managed by the Office of Nuclear Energy Science and Technology are funded in the Energy and Water Development bill, within the Energy Supply Research and Development appropriation. The Office of Nuclear Energy Science and Technology also manages several defense related programs funded in the Other Defense Activities appropriation of the Energy and Water Development bill and are discussed in the National Security section. Also funded by the Energy and Water Development bill are the Power Marketing Administrations.

Energy Resources Funding

The Department is requesting a total of $1,947.7 million for its core energy resource programs plus $22.3 million the transition to full construction funding. The request for core energy resource programs is predicated on the need to maintain a diverse portfolio of energy supply and energy efficiency related research and development.



The Department's energy efficiency and renewable energy programs are founded on the productivity, cost reduction, national security and environmental benefits of flexible, non-mandatory Federal actions in support of greater efficiency. The programs in this area carry out the Department's responsibility under the Energy Policy Act of 1992 and other major pieces of authorizing legislation. The benefits of these programs to industries, homeowners, and commercial firms can be measured in cost savings, productivity gains, and the creation of new jobs.

The FY 1998 budget request contains a net increase of $216.6 million, which reflects the President's commitment to energy efficiency and renewable energy initiatives. An increase of $40.0 million is proposed for the Climate Change Action Plan programs which contribute to the reduction of greenhouse gas and other emissions. These programs also support deployment partnerships and collaboratives with the private sector to address key technology and market barriers, and promote U.S. energy technology leadership in both the domestic and international markets.

An increase of $18.3 million is proposed to support the President's Partnership for a New Generation of Vehicles to maximize vehicle fuel economies in the 21st Century. The primary goal is to develop pre-production prototype vehicles without compromises in safety, performance, or affordability. In the short and mid-terms the goals are to demonstrate the doubling of light duty vehicle fuel economy by the year 2001 and demonstrate the tripling of fuel economy the years 2005-2010.

Additionally, an increase of $41.3 million is requested to support energy related State grants programs, which help to leverage other State, private and local funding. The Weatherization Assistance Program provides cost-effective energy conservation services by partnering with State and local service organizations to perform energy audits and to weatherize homes of the elderly and low-income residents. The State Energy Program allows States added flexibility through a consolidated grant program to deliver energy services and support market acceptance of energy efficiency technologies.

The budget request for the Fossil Energy program recognizes that nearly 85% of the Nation's energy is currently supplied by coal, oil and natural gas. With the contribution of these fuels projected to increase in coming years, the Department's Fossil Energy program focuses its

funding primarily on ways to ensure continued environmental protection and enhance our domestic oil security.

Research and development of new natural gas- and coal-fired electric power technologies can significantly reduce carbon dioxide and acid rain emissions while keeping electricity costs affordable. The FY 1998 budget moves into the final phases of development for several advanced electric power technologies, including low emission boilers, advanced generation fuel cells and ultra-high efficiency gas turbines, culminating a decade or more and several hundred million dollars of prior public and private sector investment. DOE's support for these 21st century technologies is becoming increasingly important as the U.S. industry, confronted by the uncertainties of restructuring, continues to cut back financing of longer-range, higher-risk R&D, while at the same time demand for new and cleaner sources of electricity rapidly increases throughout much of the world.

The FY 1998 budget request also recognizes that U.S. demand for clean-burning natural gas could increase significantly in the next decade, particularly in the electric power generation market. The proposed budget maintains a major effort to ensure that adequate and affordable gas supplies can continue to be produced to meet this rising demand. New exploration and production technologies, such as innovative imaging and improved fracturing techniques, can help the U.S. expand its natural gas production, particularly from difficult, low-permeability formations that are currently beyond the capabilities of today's technology.

The Fossil Energy FY 1998 budget also supports several efforts to ensure greater domestic oil security, particularly in light of rising imports. As a near-term response to a potential oil supply disruption, the FY 1998 budget maintains the Strategic Petroleum Reserve at 563 million barrels through FY 2001, respecting our international responsibilities and providing a powerful tool to blunt oil shortages. For the longer-term, the budget continues research and development into new oil exploration, production and processing technologies that can lower costs and boost domestic oil supplies, particularly from properties owned by smaller independent producers. The budget also maintains research into alternatives to conventional petroleum, including technologies to produce high-quality liquid fuels from natural gas and from coal.

In FY 1998, the Department proposes a rescission of $153.0 million and a deferral of $133.0 million from unobligated balances in the Clean Coal Technology Program. The Department has signed cost-sharing commitments for all projects in the program. Several of the current 40 projects are being restructured, therefore a portion of the previously appropriated funding can be returned to the Treasury without endangering the success of this program. The FY 1998 request also assumes that the Elk Hills Naval Petroleum Reserve will be divested on schedule in February, 1998, and accordingly proposes sufficient funding to provide for just over seven months of operations and a three-month transition period.

The Civilian Nuclear Energy program as well as the Fossil Energy Research and Development program are important to our National Energy Strategy, which recognizes the importance of having a diversity of energy resources. The Nuclear Energy Research and Development budget in FY 1998 reflects a major shift in the Department's nuclear energy programs. The Nuclear Energy Security program will address the technical issues associated with 109 aging nuclear power plants that provide about 22 percent of the Nation's electricity. These plants represent a $200.0 billion investment by electric ratepayers and provide reliable baseload power without emitting harmful pollutants such as those associated with global climate change. This new initiative will focus on research and development in nuclear power plant safety, reliability, and performance and will apply unique DOE capabilities to develop technologies to reduce the generation of spent fuel and reduce the costs associated with the

storage, transportation and disposal of spent nuclear fuel in the United States. An additional benefit will be our increased support (to a total program of $12.3 million) for nuclear energy and engineering research at universities and colleges across the country.

A significant change in this year's budget is the Administration's decision that revenues from the sale of excess uranium will no longer be used to offset the Department's budget request but instead will be deposited directly into the General Fund at the U.S. Treasury. Uranium Programs will continue to implement the lease agreement with the U.S. Enrichment Corporation and manage non-leased facilities at the gaseous diffusion plants; monitor Russian conversion of highly enriched uranium to low enriched uranium; and manage depleted uranium hexafluoride inventories.

Another key activity funded in FY 1998 is the Isotope program, which ensures the continued production of isotopes necessary for medical, industrial and research purposes. This program will receive increased funding to modify key facilities at Sandia National Laboratories to establish a domestic production capability for the vital medical isotope molybdenum-99. The Nuclear Energy program will support the advancement of science in FY 1998 by enhancing its capability to construct long-lived, highly durable nuclear power sources required for the exploration of space.

Additionally, the Department proposes to conclude the sale of the Alaska Power Administration (two projects) in FY 1998 for an estimated total of $85.0 million. The completed sale of the Eklutna project is expected by November, 1997, and the Snettisham project sale is expected to be completed in August, 1998. The proceeds of these sales will be deposited in the U.S. Treasury and do not score as savings against the Department's budget request.

National Security: Reducing the Nuclear Danger

National Security

The Department's defense laboratories and production facilities are the Nation's repository of nuclear weapons-related knowledge and engineering capability. This unique and irreplaceable resource helped win World War II and the Cold War and continues to ensure our national security and reduce the nuclear danger. The key National Security objectives driving the Department's FY 1998 budget request include:

- Maintaining the safety and reliability of the nuclear weapons stockpile;
- Reducing the weapons stockpile and downsizing the nuclear weapons complex;
- Replacing underground testing with science based techniques;
- Developing a replacement source of tritium;
- Making more information available to the public;
- Limiting weapons-usable fissile materials worldwide;
- Establishing transparent and irreversible nuclear reductions worldwide;
- Controlling nuclear exports;
- Enhancing the Safety of Soviet-Designed Reactors and assisting in the shutdown of the Chornobyl nuclear power plant.

National Security Overview

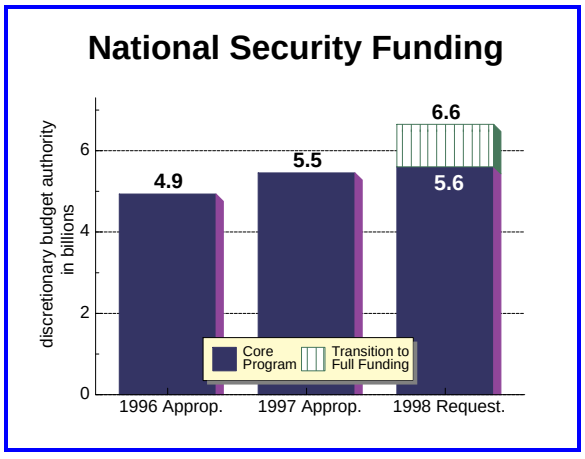
Department of Energy organizations devoted to the National Security mission include the Offices of Defense Programs; Nonproliferation and National Security; Fissile Materials Disposition; and Worker and Community Transition. In addition, within the Office of Nuclear Energy Science and Technology, the Naval Reactors, and international nuclear safety and security programs contribute to this mission.

These organizations support various aspects of the National Security mission. Defense Programs maintains the safety, security, and reliability of the enduring nuclear weapons stockpile. Nonproliferation and National Security seeks to reduce the danger posed to U.S. security by weapons of mass destruction by preventing the proliferation of weapons of mass destruction materials, technology, and expertise. Fissile Materials Disposition provides for safe and secure long-term future storage of all weapons-usable fissile materials, and the disposition of fissile materials declared surplus to national defense needs. Worker and Community Transition seeks to mitigate the impact of work force restructuring due to defense mission changes, and provides local impact assistance to affected communities. Naval Reactors provides safe, reliable, and long-lived nuclear propulsion plants to the U.S. Navy. The various nuclear energy programs included in the National Security mission concentrate on international nuclear safety and security activities, including: improving the condition and operating procedures of Soviet-designed reactors; cooperation in nonproliferation activities; and the shutdown of Chornobyl.

Funding for these National Security organizations is requested in several separate appropriations accounts. Defense Programs' operations are funded in the Weapons Activities account, and the construction funding request is part of the Defense Asset Acquisition account. Operations of the other defense-related organizations are funded in the Other Defense Activities appropriation. Naval Reactors' construction request is part of the Defense Asset Acquisition account.

National Security Funding

The $6.6 billion requested for National Security programs includes $1.0 billion required for the transition to full construction funding. This request supports activities to ensure a safe and reliable nuclear stockpile without testing, continues safe dismantlement of the nuclear weapons stockpile, and fights terrorism and the proliferation of Weapons of Mass Destruction.



The FY 1998 core program request for National Security programs is an increase of 3.8% from the FY 1997 enacted level. The growth in this area represents our efforts to build the facilities and develop the necessary capabilities to meet our strategic national security objectives. It provides for incremental funding of the National Ignition Facility at Lawrence Livermore National Laboratory in California. This facility is critical to the assurance of a viable nuclear stockpile without underground testing. It is designed to produce, for the first time in a laboratory setting, conditions of temperature and density of matter close to those that occur during the detonation of nuclear weapons. The Department proposes expansion of our work to ensure the capability to produce tritium, an essential component

of nuclear weapons, and within Stockpile Stewardship, the Department will maintain momentum recently achieved in operating the world's fastest super computer through the Accelerated Strategic Computing Initiative (ASCI).

In FY 1998, the Department also proposes to continue our work with the former Soviet Union to manage nuclear materials, and recognizes new responsibilities to reduce the threat of chemical and biological weapons proliferation.

Environmental Quality: Accelerating Progress, Meeting Commitments

Environmental Quality

The Department is taking an aggressive approach to address the immediate and long-term environmental and health risks of the Department's former weapons production complex, and resolve the issues surrounding spent nuclear fuel storage. The key environmental quality objectives driving the Department's FY 1998 budget request include:

- Making progress on the treatment, storage, and disposal of radioactive wastes;
- Reducing the risks of cleaning up nuclear weapons sites;
- Preventing future pollution;
- Finding solutions to spent nuclear fuel storage;
- Eliminating serious health, safety and environmental vulnerabilities.

Environmental Quality Overview

The Department's environmental quality organizations are the Offices of Environment, Safety and Health; Civilian Radioactive Waste Management; and Environmental Management.

The Office of Environment, Safety and Health seeks to ensure that the Department of Energy activities are conducted in a way that prevents accidents or injuries to workers and the public, and prevents adverse effects on the environment. The program develops internal policy and improves on the existing regulatory infrastructure for safe operations; provides technical assistance and guidance to line management for program implementation; conducts independent oversight of environment, safety, health, and safeguards and security performance; and systematically identifies and feeds back lessons learned to improve safety, health and environmental planning and operations. In addition, the Office of Environment, Safety and Health serves as the Department's source of expertise in disciplines such as nuclear safety engineering, public health, industrial hygiene, radiation protection, construction safety, and risk management.

The Department budgets for environment, safety and health activities in two appropriation accounts: Energy Supply Research and Development, and Other Defense Activities. The Energy Supply Research and Development programs of the Office of Environment, Safety and Health concentrate on five business functions: Technical Assistance; National Environmental Policy Act; Health Studies; Management and Administration; and Program Direction. The Other Defense Activities programs of the Office of Environment, Safety and Health concentrate on three business functions: Oversight, Health Studies, and the Radiation Effects Research Foundation.

The Civilian Radioactive Waste Management Program is funded through two appropriations: the Nuclear Waste Disposal Fund, and Defense Nuclear Waste Disposal. This program is funded such that the generators/owners of spent fuel and high level radioactive waste

contribute funding to cover all of the costs associated with the permanent storage of the waste. Commercial utilities pay fees into the Nuclear Waste Fund and the Defense appropriation covers the disposal costs of waste resulting from Atomic Energy Defense Activities.

The programs managed by the Office of Environmental Management are funded under six appropriation accounts: Defense Environmental Restoration and Waste Management; Energy Supply, Research and Development; Uranium Enrichment Decontamination and Decommissioning (D&D) Fund; Defense Environmental Management Privatization; National Defense Asset Acquisition; and Energy Assets Acquisition. There are five major programmatic areas within the Office of Environmental Management.

- *Environmental Restoration* — These activities stabilize radioactive waste, conduct remediation, and perform decommissioning and decontamination work at Department of Energy sites. The program also performs assessments and characterizations to determine the potential for radioactive and hazardous waste releases and to reduce and remove the potential risks to the environment, human health and safety from past non-defense activities. Environmental Restoration activities that are authorized under their own legislation include the Uranium Mill Tailings Remedial Action (UMTRA) Surface and Ground Water projects and the Formerly Utilized Sites Remedial Action Project (FUSRAP). The UMTRA projects are directed toward the cleanup of uranium mill tailings sites, while the FUSRAP supports the cleanup of radioactive contaminated sites from the early years of the Nation's atomic energy program. FUSRAP sites also include commercial operations that Congress authorized the Department to remedy, such as the Maywood and Wayne sites in New Jersey.

- *Uranium Enrichment Decontamination and Decommissioning Fund* — These activities provide for the cleanup of the Department's three gaseous diffusion plants located in Oak Ridge, TN, Paducah, KY, and Portsmouth OH, and administer a reimbursement program for active uranium and thorium processing sites which sold uranium and thorium to the United States Government.

- *Waste Management* — These activities provide an effective and efficient system to characterize, store, transport, treat and dispose of radioactive, hazardous, mixed, and sanitary wastes generated by past and ongoing operations at Department of Energy facilities. Major facilities under the purview of the Waste Management program include the Defense Waste Processing Facility, Waste Isolation Pilot Plant, and West Valley Demonstration Project.

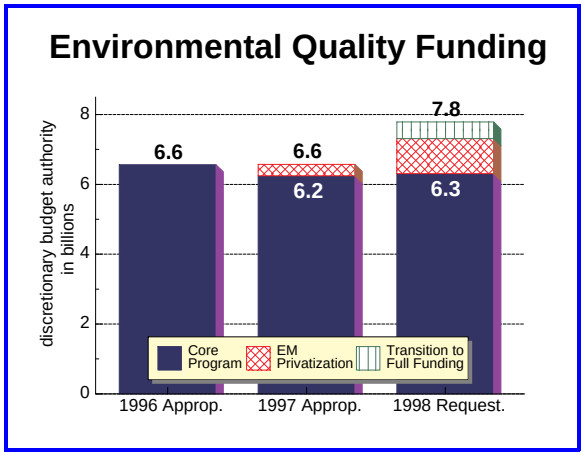
- *Science and Technology* (includes Technology Development and Science Program) — These activities provide new and improved cleanup technologies that reduce risk to workers, the public, and the environment, as well as the cost of cleanup at Department of Energy facilities. The focus areas of development include: mixed waste characterization, treatment, and disposal; radioactive tank waste remediation; subsurface contaminants; and decontamination and decommissioning. The program also includes activities that crosscut the focus areas, such as: characterization, monitoring and sensors; efficient separations and processing; robotics; industry and university programs; and technology system applications. The Technology Development program focuses activities on the Department's major environmental management issues, while involving the best talent in the Department of Energy, public, and private science and engineering communities. The Environmental Management Science Program strives to develop and implement a targeted long-term basic research agenda for environmental problems so that breakthrough

approaches will lead to significantly reduced cleanup costs over the life-cycle of the Environmental Management Program. The Science Program is closely integrated with the Technology Development focus areas and closely coordinated with the Office of Energy Research.

- *Nuclear Material and Facility Stabilization* — This is a national program to stabilize and safeguard excess nuclear materials currently stored in various forms and locations, and to reduce the potential risks posed to workers and the environment. The program provides the means to achieve cost savings and efficiencies through deactivation of surplus facilities, which results in lower costs for maintaining facilities awaiting decontamination and decommissioning. This program manages the Spent Nuclear Fuel program, including foreign research reactor fuel and domestic spent fuel, which supports the Nation's nonproliferation goals and policies. The Nuclear Material and Facility Stabilization program also serves as the focal point for inter-office/field operations activities and provides policy direction for landlord planning and budgeting. This program also focuses national attention on the Transportation Management, Emergency Management, Characterization, and Pollution Prevention programs, which have impacts across the entire Department of Energy complex.

Environmental Quality Funding

The Department is making measurable progress in identifying and addressing the highest human health, safety, and environmental risks within the Department of Energy complex. The acceleration of the cleanup of former weapons sites is being accomplished by working cooperatively with the States and through improved contracting, technology development, and risk management. In addition, the Department is making progress toward an answer to some of the most critical questions in the area of long-term nuclear waste disposal.



The need for a nuclear waste repository is one of the most daunting technical and political problems. This effort has been plagued by the inability to answer with confidence the fundamental question on the suitability of Yucca Mountain for long-term nuclear waste disposal. Now the government is on the verge of answering this most basic question. The $380.0 million requested for the Civilian Radioactive Waste Management program will further improve our knowledge of Yucca Mountain and provide in 1998 the scientific basis to determine its viability as a disposal site.

The FY 1998 budget request for programs within the Office of Environment, Safety, and Health continues the program's commitment to the Radiation Effects Research Foundation just below the FY 1997 level, and proposes $44.2 million for Health Studies, which reflects the reorganization of several epidemiological activities within the non-defense portion of the Energy Supply Research and Development appropriation.

The FY 1998 Environmental Management budget request has three components: $5,595.6 million for traditional activities; $645.0 million for asset acquisition; and $1,006.0 million for privatization efforts. The significant difference from the FY 1997 appropriation is an increased emphasis on privatization and the Administration's commitment to full up-front funding for construction line-items (included in the Asset Acquisition accounts). The request

provides a sufficient level of funding to comply with the provisions of Executive Order 12088, to address all urgent risks, and meet Defense Nuclear Facility Safety Board (DNFSB) recommendations to the maximum extent possible. It also provides for the accelerated completion of cleanup activities associated with the Formerly Utilized Sites Remedial Action Program (FUSRAP). The request will enable the program to reduce outyear mortgage costs and continue to accelerate the closure of sites.

The FY 1998 budget request for Environmental Management programs builds on prior investments and emphasizes compliance, fixed asset acquisition, and privatization, and continues efforts to develop and implement the ten-year plan to complete remediation at many of the program's sites within a decade. With these new tools and improved cost management, we can now develop and implement a program plan that will focus on completing remedial actions at many of our sites over the next decade.

Compliance — The Department places a high priority on compliance with environmental laws, regulations, agreements, standards, nuclear safety rules, and other applicable requirements. All Environmental Management activities must be conducted in compliance with Federal, State, local, and Indian Nation environmental and health and safety laws and regulations. Environmental Management's intent is to comply with environmental laws and regulations, as well as meet the terms and conditions of existing agreements, including DNFSB recommendations to the maximum extent possible. There are instances where the statutes and regulations allow flexibility in achieving compliance. The Environmental Protection Agency "Superfund Reforms" are examples of this premise. In these instances, a modified compliance approach, that is provided for within the existing regulatory/statutory structure, can improve and enhance environmental programs, and result in faster project completion. These opportunities are often in the best interest of all affected parties and will be evaluated, discussed with stakeholders and regulatory agencies, and implemented where appropriate.

Asset Acquisition — The fixed asset funding under the Environmental Management (EM) program provides for both new construction and on-going construction activities, including refurbishing or replacing inadequate facilities and infrastructure to meet modern environmental compliance requirements. Beginning with the FY 1998 budget request, EM will request full funding for its line-item construction projects. Under this approach, all of the budget authority associated with EM's line-item construction projects is being requested in FY 1998, as opposed to incremental funding each year throughout the construction phase of these projects. In addition, the funding requested for these EM defense and non-defense activities is now included in separate, Department-wide appropriation accounts.

Privatization — To reduce costs and accelerate cleanup activities in the EM program, an innovative privatization business strategy has been developed. The EM privatization initiatives seek to identify discrete cleanup efforts for which the Department will ultimately share the risk with the private sector. Cleanup examples include: treated waste; disposed waste; remediated soils; and decontaminated/decommissioned facilities. Because the privatization strategy encourages free market competition through openly competed, fixed price contracts, and places more financial risk and increased responsibility for performance on the contractor than under traditional contract methods, significant savings for the taxpayer can be achieved over the existing Management and Operating (M&O) contracts in place at the Department's sites. The product or service identified in the contract will be purchased by the EM program only if it meets agreed upon specifications. The risk for non-performance will be assumed by the contractor. In FY 1998, funding for privatization activities is being requested in a separate appropriation account.

Ten-Year Plan — The Office of Environmental Management has embarked on a major effort to complete remediation at most nuclear sites over the next decade. To this end, the Environmental Management sites are developing Ten-Year Plans. The Ten-Year Plans should produce major cost savings through mortgage reduction in the outyears when compared to outyear projections previously developed. Additionally, EM is developing an Integrated Strategic Planning, Budgeting, and Management System (ISPBMS) to streamline EM's management system and improve the interactions between Headquarters and the field offices. The new integrated management system will consist of the EM strategic plan, which will describe the overall philosophy and strategy underlying the ten-year plan; the ten-year plans will include the project baseline summaries that describe each project in each site's plan, the annual budgets for those projects, the performance measures that will be applied to track the progress of each project, and the annual performance commitments for each project; the tracking systems for measuring progress and performance; and independent reviews that will optimize and validate the costs and schedules in the ten-year plans. EM's Ten-Year Plan will be developed with the following vision and principles:

- *EM Vision*: Within a decade, the Environmental Management program will complete remediation at many nuclear sites. At a small number of sites, treatment will continue for the few remaining waste streams (high-level and transuranic waste). This unifying vision will drive budget decisions, sequencing of projects, and actual actions taken to meet program objectives. The Environmental Management program will implement the vision in conjunction with regulators and stakeholders. "Complete cleanup" means that land, facilities, and materials are adequately safe to be available for alternative use, based on future land use policy decisions, with a minimum cost for long-term surveillance and monitoring. Facilities where only surveillance and maintenance are to be performed, or where remedies such as groundwater pump and treatment operations are installed and operational, or where the government will retain storage responsibilities, are considered to be complete for this purpose. An important assumption in achieving this vision is stability of funding at approximately current levels of funding. The first draft of EM's Ten-Year Plan is scheduled to be released on March 31, 1997. The final draft will be released in September, 1997.

- *Implementing EM Principles*: Achievement of the EM vision will be guided by the following seven principles:

  (1) Eliminate the most urgent risks;

  (2) Reduce mortgage and support costs to free up resources for further risk reductions;

  (3) Protect worker health and safety;

  (4) Reduce the generation of waste;

  (5) Create a collaborative relationship between DOE and its regulators and stakeholders;

  (6) Focus technology development on cost and risk reduction; and,

  (7) Integrate waste treatment and disposal across sites.

Science & Technology: Ideas Creating Jobs, Products and Industries for Tomorrow

Science and Technology

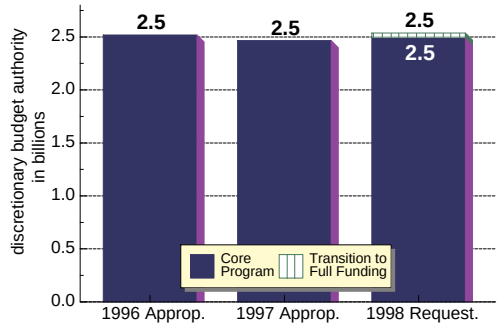
The Department is one of the Nation's top supporters of fundamental science research across a broad range of disciplines, including physics, materials science, chemistry, nuclear medicine and structural biology. Advances in science and technology have provided the long-term basis for economic growth, job creation, and improving our quality of life. The science and technology objectives driving the Department's FY 1998 budget request include:

- Maintaining improved services delivery at DOE science facilities;
- Initiating science-based programs to find new methods for environmental cleanup;
- Exploring the frontiers of High Energy Physics;
- Investigating the causes of global climate change;
- Restructuring the Fusion Energy Research program;
- Advancing the state of the art in high performance computing;
- Expanding access to global science through the information infrastructure, including the "Next Generation Internet";
- Advancing the state of genomic research.

Science and Technology Overview

Funding for the Science and Technology mission is comprised of the entire research and development budget of the Office of Energy Research and the budget for Technical Information Management, a technical information dissemination program managed by the Office of Energy Research. The Office of Energy Research has a dual mission: one element concentrates on basic research in energy related areas, including basic energy sciences, magnetic fusion, and biological and environmental sciences, and is funded in the Energy Supply Research and Development appropriation account; the second element focuses on fundamental research in energy, matter, and the basic forces of nature. These high energy and nuclear physics programs are funded in the General Science and Research appropriation. Construction funds are requested in either the Energy Asset Acquisition account or the Science Asset Acquisition account, depending upon whether the projects are part of an Energy Supply Research and Development or General Science and Research program.

Science & Technology Funding



Science and Technology Funding

The Department is requesting $2,497.0 million for core science and technology programs plus $40.0 million for the transition to full construction funding. The request will continue the pursuit of science, which has resulted in more than 60 Nobel Prizes and served more than 15,000 scientists each year from hundreds of universities, Federal laboratories and private sector companies in all 50 States.

This budget proposes the design of the National Spallation Neutron Source, continues our international collaboration in the Large Hadron Collider, maintains our core fusion energy science program, and supports high profile initiatives in global climate

change, human genome, and bioremediation. In addition, the Department requests $35.0 million as part of an Administration-wide initiative to advance the capabilities of the Internet to meet the challenges of the future.

Detailed Budget Summary

The following sections, organized by appropriations, discuss in detail our proposed FY 1998 budget request which is a strong portfolio of investments for a better future. Up front, you will see both the funding request and the performance outcomes for the work proposed for funding in FY 1998. Unless otherwise indicated in the narrative, we have included funding for Asset Acquisition Appropriations with the funding the projects support. The FY 1998 Budget Request and Performance Plan shown in the following pages is an implementation of our strategic objectives and provides the Congress and the American people with information on the real results we propose to achieve with this request.

Summary by Business Line

	FY 1996 Comparable Approp.	FY 1997 Comparable Approp.	FY 1998 Request to Congress	FY 1997 vs. FY 1998	
Business Lines					
National Security					
Defense Programs	3,436,740	3,907,431	5,078,650	1,171,219	30.0%
Nonproliferation & Nat'l Security	562,626	632,632	668,000	35,368	5.6%
Fissile Materials Disposition	70,151	103,796	103,796	——	——
Worker and Community Transition	81,550	62,000	70,500	8,500	13.7%
Nuclear Energy (050)	104,030	68,500	81,000	12,500	18.2%
Naval Reactors (NE)	680,775	681,932	647,800	-34,132	-5.0%
Total, National Security	4,935,872	5,456,291	6,649,746	1,193,455	21.9%
Energy Resources					
Energy Efficiency & Renewable Energy	806,612	800,782	1,017,400	216,618	27.1%
Fossil Energy	712,350	519,369	384,908	-134,461	-25.9%
Nuclear Energy (except Nat'l Security)	289,331	242,869	330,667	87,798	36.2%
Power Marketing Administrations					
Alaska Power Administration	9,745	4,000	1,000	-3,000	-75.0%
Southeastern	19,792	16,359	16,222	-137	-0.8%
Southwestern	29,732	25,210	26,500	1,290	5.1%
Western Area	256,657	197,356	208,334	10,978	5.6%
Falcon & Amistad operating & maint.	1,000	970	1,065	95	9.8%
Colorado river basin	——	-10,000	-16,098	-6,098	-61.0%
Total, Power Marketing Administrations	316,926	233,895	237,023	3,128	1.3%
Total, Energy Resources	2,125,219	1,796,915	1,969,998	173,083	9.6%
Science and Technology					
Energy Research	2,519,259	2,465,394	2,536,991	71,597	2.9%
Technical Information Management	11,780	11,837	11,987	150	1.3%
Total, Science and Technology	2,519,259	2,465,394	2,536,991	71,597	2.9%
Environmental Quality					
Environmental Management	5,977,161	5,701,202	6,240,635	539,433	9.5%
Civilian Radioactive Waste Mgmt. (disc.)	399,467	382,000	380,000	-2,000	-0.5%
Environment, Safety & Health	188,253	162,879	162,916	37	0.0%
Total, Environmental Quality	6,564,881	6,246,081	6,783,551	537,470	8.6%
Total, Business Lines	16,145,231	15,964,681	17,940,286	1,975,605	12.4%
Other Programs	322,482	282,571	299,216	16,645	5.9%
Excess FERC receipts	-49,980	-31,263	-22,000	9,263	29.6%
Total, Department of Energy Appropriations	**16,417,733**	**16,215,989**	**18,217,502**	**2,001,513**	**12.3%**
DOE Civilian programs (250/270 function) funding	*(5,741,792)*	*(5,220,228)*	*(5,625,908)*	*405,680*	*7.8%*
DOE Defense (050 function) funding	*(10,675,941)*	*(10,995,761)*	*(12,591,594)*	*1,595,833*	*14.5%*
EM privatization	——	330,000	1,006,000	676,000	204.8%
Total, Department of Energy	16,417,733	16,545,989	19,223,502	2,677,513	16.2%

Summary by Appropriation Account

	FY 1996 Comparable Approp.	FY 1997 Comparable Approp.	FY 1998 Request to Congress	FY 1997 vs. FY 1998	
Energy and Water Development					
Energy Supply Research & Development	2,842,816	2,677,974	2,999,497	321,523	12.0%
Energy asset acquisition	117,089	86,608	88,914	2,306	2.7%
Uranium Enrichment D&D Fund	278,807	200,200	248,788	48,588	24.3%
General Science & Research Activities	797,999	831,000	875,910	44,910	5.4%
Science Asset Acquisition	169,000	165,000	126,870	-38,130	-23.1%
Atomic Energy Defense Activities					
Weapons Activities	3,217,162	3,596,600	3,576,255	-20,345	-0.6%
Defense Env. Restoration & Waste Mgmt.	5,206,891	5,074,305	5,052,499	-21,806	-0.4%
Other Defense Activities	1,500,181	1,581,559	1,605,981	24,422	1.5%
Defense Nuclear Waste Disposal	248,400	200,000	190,000	-10,000	-5.0%
National Defense Asset Acquisition	503,307	543,297	2,166,859	1,623,562	298.8%
Total, Atomic Energy Defense Activities	10,675,941	10,995,761	12,591,594	1,595,833	14.5%
Departmental Administration	114,914	89,633	101,274	11,641	13.0%
Inspector General	26,546	23,853	29,499	5,646	23.7%
Power Marketing Administrations	316,926	233,895	237,023	3,128	1.3%
Federal Energy Regulatory Commission	——	——	——	——	——
Nuclear Waste Disposal Fund	151,067	182,000	190,000	8,000	4.4%
Total, Energy and Water Development	15,491,105	15,485,924	17,489,369	2,003,445	12.9%
EWD Civilian programs (250/270 functions) funding	*(4,815,164)*	*(4,490,163)*	*(4,897,775)*	*407,612*	*9.1%*
EWD Defense (050 function) funding	*(10,675,941)*	*(10,995,761)*	*(12,591,594)*	*1,595,833*	*14.5%*
Interior and Related Agencies					
Fossil Energy Research & Development	419,573	364,704	346,408	-18,296	-5.0%
Alternative Fuels Production	-2,400	-4,000	-1,500	2,500	62.5%
Naval Petroleum & Oil Shale Reserves	148,433	143,786	117,000	-26,786	-18.6%
Energy Conservation	535,713	549,762	687,700	137,938	25.1%
Economic Regulation	6,282	2,725	2,725	——	——
Strategic Petroleum Reserve	——	——	209,000	209,000	——
Energy Information Administration	72,263	66,120	62,800	-3,320	-5.0%
Clean Coal Technology	146,744	14,879	-286,000	-300,879	-2022.2%
Total, Interior and Related Agencies	1,326,608	1,137,976	1,138,133	157	0.0%
UE D&D Fund discretionary payments	-350,000	-376,648	-388,000	-11,352	-3.0%
Excess FERC receipts	-49,980	-31,263	-22,000	9,263	29.6%
Total, Department of Energy Appropriations	**16,417,733**	**16,215,989**	**18,217,502**	**2,001,513**	**12.3%**
DOE Civilian programs (250/270 function) funding	*(5,741,792)*	*(5,220,228)*	*(5,625,908)*	*405,680*	*7.8%*
DOE Defense (050 function) funding	*(10,675,941)*	*(10,995,761)*	*(12,591,594)*	*1,595,833*	*14.5%*
EM privatization	——	330,000	1,006,000	676,000	204.8%
Total, Department of Energy	16,417,733	16,545,989	19,223,502	2,677,513	16.2%

Crosswalk from Appropriation Structure to Business Line

	National Security	Energy Resources	Science & Tech-nology	Environ-mental Quality	Other	FY 1998 Request to Congress
Energy and Water Development						
Energy supply research & development	——	625,017	1,482,944	791,303	100,233	2,999,497
Energy asset acquisition	——	35,350	51,267	2,297	——	88,914
Uranium enrichment D&D fund	——	——	——	248,788	——	248,788
General science & research activities	——	——	875,910	——	——	875,910
Science asset acquisition	——	——	126,870	——	——	126,870
Atomic energy defense activities:						
Weapons activities	3,576,255	——	——	——	——	3,576,255
Defense environmental restoration & waste mgmt.	——	——	——	5,052,499	——	5,052,499
Other defense programs	1,549,296	——	——	54,000	2,685	1,605,981
Defense nuclear waste disposal	——	——	——	190,000	——	190,000
National defense asset acquisition	1,524,195	——	——	642,664	——	2,166,859
Total, Atomic energy defense activities	6,649,746	——	——	5,939,163	2,685	12,591,594
Departmental administration	——	——	——	——	101,274	101,274
Office of the inspector general	——	——	——	——	29,499	29,499
Power marketing administrations	——	237,023	——	——	——	237,023
Federal energy regulatory commission	——	——	——	——	——	——
Nuclear waste disposal fund	——	——	——	190,000	——	190,000
Total, Energy and Water Development	6,649,746	897,390	2,536,991	7,171,551	233,691	17,489,369
Interior and Related Agencies						
Fossil energy research and development	——	346,408	——	——	——	346,408
Alternative Fuels Production	——	-1,500	——	——	——	-1,500
Naval petroleum and oil shale reserves	——	117,000	——	——	——	117,000
Energy conservation	——	687,700	——	——	——	687,700
Economic regulation	——	——	——	——	2,725	2,725
Strategic petroleum reserve	——	209,000	——	——	——	209,000
Energy information administration	——	——	——	——	62,800	62,800
Clean coal technology	——	-286,000	——	——	——	-286,000
Total, Interior and Related Agencies	——	1,072,608	——	——	65,525	1,138,133
Uranium enrichment d&d fund discretionary payments	——	——	——	-388,000	——	-388,000
Excess fees and recoveries, FERC	——	——	——	——	-22,000	-22,000
Total, Department of Energy Appropriations	**6,649,746**	**1,969,998**	**2,536,991**	**6,783,551**	**277,216**	**18,217,502**
Environmental Management privatization	——	——	——	1,006,000	——	1,006,000
Total, Department of Energy	6,649,746	1,969,998	2,536,991	7,789,551	277,216	19,223,502

Energy Supply Research and Development

The Energy Supply Research and Development appropriation accounts support a variety of energy research and applied technology programs as well as programs providing environmental oversight and mitigation. Organizations with programs supported by this appropriation include Solar and Renewable Resources Technologies; Nuclear Energy; Environment, Safety and Health; Energy Research; Other Energy Programs; and Environmental Restoration and Waste Management.

	FY 1996 Comparable Appropriation	FY 1997 Comparable Appropriation	FY 1998 Request	FY 1997 vs. FY 1998	
Energy Supply Research and Development					
Solar and Renewable Resources Technologies	284,857	267,152	342,500	75,348	28.2%
Nuclear Energy	311,695	258,200	301,052	42,852	16.6%
Environment, Safety and Health	155,652	115,974	108,916	-7,058	-6.1%
Energy Research	1,482,073	1,412,237	1,470,957	58,720	4.2%
Other Energy Programs	113,579	110,400	112,220	1,820	1.6%
Environmental Restoration & Waste Management	607,752	579,094	682,387	103,293	17.8%
Subtotal, Energy Supply Research and Development	2,955,608	2,743,057	3,018,032	274,975	10.0%
Use of prior year balances	-112,792	-65,083	-18,535	46,548	71.5%
Total, Energy Supply Research and Development	2,842,816	2,677,974	2,999,497	321,523	12.0%
Energy Assets Acquisition — Incremental Funding					
Solar and Renewable Resources Technologies	*1,500*	*2,800*	*2,200*	*-600*	*-21.4%*
Nuclear Energy	*8,900*	*5,000*	*10,825*	*5,825*	*116.5%*
Energy Research	*95,344*	*66,373*	*28,260*	*-38,113*	*-57.4%*
Environmental Restoration & Waste Mgmt.	*11,345*	*12,435*	*2,297*	*-10,138*	*-81.5%*
Total, Incremental Funding	*117,089*	*86,608*	*43,582*	*-43,026*	*-49.7%*
Total, ESR&D plus Incremental Construction	*2,959,905*	*2,764,582*	*3,043,079*	*278,497*	*10.1%*
Energy Assets Acquisition — Transition to Full Construction Funding					
Nuclear Energy	——	——	*22,325*	*22,325*	——
Energy Research	——	——	*23,007*	*23,007*	——
Total, Transition to Full Construction Funding	——	——	*45,332*	*45,332*	——
Total, Energy Supply R&D plus Construction	*2,959,905*	*2,764,582*	*3,088,411*	*323,829*	*11.7%*

Energy Efficiency and Renewable Energy

Mission

The mission of the Office of Energy Efficiency and Renewable Energy (EE) is to work with our customers to lead the Nation to a stronger economy, a cleaner environment, and a more secure future by developing and deploying sustainable energy technologies that meet the needs of the public and the marketplace.

Program Overview

To fulfill its mission, the Office of Energy Efficiency and Renewable Energy (EE) supports research and development efforts in energy efficiency and renewable technologies in utility,

building, transportation, and industry sectors. EE also supports efforts to commercialize and deploy these technologies in both the domestic and international markets. In addition, EE provides current information on these technologies to the public to encourage investments/acceptance/incorporation of these technologies in the energy practices of businesses, communities, and State and local governments. In a major portion of these efforts, EE routinely requires matching funds from industries, States, and other program partners and is successfully achieving, at a minimum, 50-50 cost-shared projects. EE is funded by the Energy Supply R&D, Energy Assets Acquisition and Energy Conservation appropriation accounts. The activities provided by the Energy Supply R&D appropriation will be discussed in this section. Programs supported by Energy Conservation appropriation will be discussed in the Interior and Related Agencies appropriations.

Since the passage of the Energy Policy Act of 1992, there has been bipartisan support for the solar and renewable energy programs, although funding has been reduced in FY 1996 and FY 1997 from the FY 1995 level. The FY 1995 funding level reflected the startup of Presidential initiatives for the Climate Change Action Plan program, deployment partnerships, and efforts in industry growth/sustainability and in penetrating international markets. The Climate Change Action Plan (CCAP) initiative consists of any existing or new programs that contributed to the reduction of greenhouse gas emissions (carbon dioxide, methane and nitrous oxide). Deployment partnerships are supported by funding demonstration projects to ensure that key technological barriers are addressed. Industry growth/sustainability is achieved by funding core R&D activities to maintain the U.S. lead role in these technologies. Investing in international market penetration now will permit the U.S. renewable energy industries to capture international market share, create domestic jobs, and generate export revenue.

Budget Overview

In FY 1998, Energy Efficiency and Renewable Energy (EE) is requesting $329.7 million in the Energy Supply R&D appropriation and is also planning to use $15.0 million in prior year balances for a program level of $342.5 million, in addition to the $707.7 million requested in the Energy Conservation account within the Interior and Related Agencies Appropriations for a total of $1,052.4 million (gross), including the $2.2 million in Assets Acquisition, for the Office of EE. The $75.3 million increase in Energy Supply R&D supports funding for the Presidential Initiatives and reflects the priority that the Administration considers commensurate to the role these programs play in contributing to National energy security. The Administration has chosen to fully support the Solar and Renewable Program because it will produce tangible results in such areas as exporting technology, domestic employment, and environmentally friendly energy resources. The FY 1998 budget request for EE's Solar and Renewable Energy program funds a balanced portfolio of R&D in near-term, mid-term and long-term renewable technologies. The Solar and Renewable Energy deployment activities are heavily cost-shared by industry. The amount of cost-sharing by industry is proportionately related to how close the technology is to market entry.

	FY 1996 Comparable Appropriation	FY 1997 Comparable Appropriation	FY 1998 Request	FY 1997 vs. FY 1998	
Solar and Renewable Resources Technologies					
Solar Energy					
Solar building technology research	1,925	2,500	4,000	1,500	60.0%
Photovoltaic energy systems	61,268	60,000	77,000	17,000	28.3%
Solar thermal energy systems	24,011	22,250	19,800	-2,450	-11.0%
Biofuels energy systems	53,198	55,300	76,540	21,240	38.4%
Wind energy systems	31,420	29,000	42,858	13,858	47.8%
Renewable energy production incentive program	658	2,000	4,000	2,000	100.0%
International solar energy program	3,881	750	7,000	6,250	833.3%
Solar technology transfer	10,779	——	1,360	1,360	——
National renewable energy laboratory	500	500	2,800	2,300	460.0%
Resource assessment	1,869	——	——	——	——
Total, Solar Energy	189,509	172,300	235,358	63,058	36.6%
Geothermal	29,399	30,000	30,000	——	——
Hydrogen research	14,331	15,000	15,000	——	——
Hydropower	3,483	1,000	1,000	——	——
Renewable Indian energy resources	——	4,000	——	-4,000	-100.0%
Electric energy systems and storage	33,744	31,750	45,500	13,750	43.3%
Program direction	14,391	13,102	15,642	2,540	19.4%
Subtotal, Solar & Renewable Resources Technologies	284,857	267,152	342,500	75,348	28.2%
Use of prior year balances	-15,800	-18,932	-15,000	3,932	20.8%
Total, Solar and Renewable Resources Technologies	269,057	248,220	327,500	79,280	31.9%
Energy Assets Acquisition — Incremental Funding					
National renewable energy laboratory	*1,500*	*2,800*	*2,200*	*-600*	*-21.4%*
Total, Solar and Renewable plus construction	*270,557*	*251,020*	*329,700*	*78,680*	*31.3%*

The challenge DOE faces in FY 1998 is to produce continued successes in a time of declining Federal budgets. The strategy for achieving this is demonstrated in the funding priorities of the Solar and Renewable program where Photovoltaic, Biofuels, Wind, and Electric Energy Systems and Storage technologies receive the majority of the budget. The Photovoltaic program in recent years has achieved numerous technological breakthroughs from which commercial applications are currently being realized. There is great industry interest and financial support for taking these applications into the marketplace. The Biofuels program has garnered similar interest and support from the utilities and transportation industry because it has demonstrated great potential in providing a real alternative energy resource for baseload power production and producing ethanol, an alternative fuel option, that is cost-competitive with fossil fuels. Although Wind technology can currently produce electric power at a cost of 4 to 5 cents/kWh (at wind speed of 15 mph), it is important to invest further in this technology because the wind energy technology sales in the world market is projected to reach $2.0-3.0 billion by the year 2000. The U.S. wind industry can capture a sizable market share if improvements to current technologies can be made to further decrease the cost of electric power production. Electric Energy Systems and Storage program has made great strides in its High Temperature Superconductivity work. The Department leads the National effort to capture the energy saving potential of superconductivity which will provide materials with 100 times carrying capacity of copper wire. The program has mobilized the resources of U.S. industries, National Labs, and Universities to solve the problems of manufacturing superconducting electrical wires and to design super-efficient electrical systems that use these

wires. Superconductivity has the potential to bring about an energy revolution of the same magnitude as the one the communications industry experienced upon the introduction of fiber optics.

FY 1998 Budget Request

The FY 1998 budget program level of $344.7 million supports and emphasizes the following major program activities:

Photovoltaic (PV) — $77.0 million

Half of the program's resources fund fundamental research, which is essential for continual progress towards long-term goals of improved performance and lower costs. The remaining resources will be used in competitive procurements for highly cost-shared projects with U.S. utilities and the photovoltaic industry. The cost-shared projects focus on three areas: 1) researching manufacturing process technologies (PVMat); 2) establishing and economically validating utility applications of photovoltaic systems (UPVG); and 3) developing photovoltaic products that can be integrated into commercial and residential buildings (PV:BONUS).

Solar Thermal — $19.8 million

Continues FY 1997 R&D activities in three Solar Thermal Electric (STE) technologies: power towers, dish/engines, and parabolic troughs. The STE program is a leveraged cost-shared program with industry and user communities that aims to achieve technology advancements to produce electricity at 5-7 cents/kWh cost from a current cost of 17 cents/kWh.

Biopower/Biofuels — $76.5 million

The Biofuels program's goal is to develop cost-competitive technologies in two major focus areas: converting biomass resources into electric power production (Biopower), and converting biomass to liquid transportation fuels, mainly ethanol production (Biofuels). Biopower/Biofuels technology is pursued because it: 1) is a low-cost renewable baseload electric generation alternative; 2) will create jobs in rural areas through dedicated feedstock for Biofuels systems; and 3) benefits the environment in two ways: a) Biofuels can provide essentially a net zero greenhouse gas energy source because carbon released to the atmosphere is offset by carbon consumption during this resources's growing cycle, and b) encourages the use of agricultural residues such as forestry wastes and rice-straws as biomass fuels.

Wind — $42.9 million

The program focuses R&D efforts on understanding how wind turbine blades may better capture the kinetic energy in winds of varying speeds and how the structures and components of wind turbines can be best designed for cost effectiveness and reliability. The goal of the wind program is to reach a cost of wind-generated electricity of 2.5 cents/kWh so that the domestic wind industry will be in the position to seize a good share of the projected $2.0-3.0 billion wind technology sales market in the year 2000.

International Solar Energy Program — $7.0 million

The International Solar program increases U.S. exports of renewable technologies through strategic marketing and public/private partnerships and by increasing availability of commercial financing resources. Increasing sales and exports of proven renewable energy technologies will bring economic growth, jobs, a cleaner environment and lower price for these technologies in the future.

Geothermal — $30.0 million

Geothermal energy comprises an estimated 40 percent of the U.S. energy resource base. Electric power from geothermal resources is delivered at low environmental impact and has the highest reliability of base-load power from any source. Geothermal R&D efforts are focused on the following activities: 1) locate and confirm undiscovered geothermal reservoirs; 2) reduce exploration and production drilling costs; and 3) enhance conversion efficiency of geothermal energy to electric power. These program actions will contribute to the goal of a life-cycle cost of producing electricity at 3 cents/kWh and will yield increases in the amount of geothermal energy that can be economically recovered.

Hydrogen Research and Development — $15.0 million

This program funds R&D efforts in hydrogen production from renewable energy power system or gasification of biomass or sunlight and water, and hydrogen storage and transport technologies. It also funds cost-shared projects with industry on hydrogen production by gasification, photochemical and reforming processes for near term market introduction.

Electric Energy Systems and Storage — $45.5 million

The program funds four different activities related to electricity: 1) High Temperature Superconductivity has the majority of the funding and its R&D efforts are on increasing electric utility system capacity and increasing motor and generator efficiencies; 2) Electric and Magnetic Fields program coordinates health effects research; 3) Energy Storage program continues R&D efforts on enhancing performance, reliability and reducing costs of utilities by providing dependable energy storage technologies; and lastly 4) the Climate Challenge program is a joint initiative between DOE and the electric utility industry to reduce greenhouse emissions. These activities all contribute to developing the advanced electric power delivery technologies that will increase the flexibility, capacity and efficiency of the Nation's electric power systems and will also enable increased utilization of renewable energy systems.

Program Direction — $15.6 million

Funding supports 129 FTEs at both Headquarters and the field (Salary and Benefits - $12.2 million, Travel - $0.6 million, and Working Capital Fund - $2.1 million). Funding also supports $0.7 million in contractual services that funds the operation of the Golden Field Office and support services for all Solar and Renewable Energy programs.

FY 1998 Performance Goals and Measures

Developing Renewable Domestic Energy

Advance renewable energy development through cost-shared industry, laboratory and DOE partnerships and improve the global competitiveness of U.S. renewable energy industry. Build the U.S. renewable industry to $1.0 billion in sales by the year 2000 and more than 20 gigawatts(GW) of capacity by 2010.

FY 1998 success will be measured by:

- U.S. renewable industry sales of more than $800.0 million, more than half in exports.
- Exceed 500 MW of installed renewable energy.
- Initiate the government, industry and customer roadmap to put solar/PV panels on one million roofs.

Implementing the Climate Change Action Plan

Support the President's Climate Change Action Plan to reduce carbon emissions by over 15 million metric tons, produce $10.0 billion in energy savings, and stimulate $15.0 billion in industrial investment, by the year 2000.

FY 1998 success will be measured by:

- Partnering with more than 2000 voluntary organizations committed to reducing Greenhouse Gases.
- Taking over 4 million tons of carbon out of the waste stream.
- Saving business and industry over $1.0 billion in waste reduction and efficiency gains.

Highlights of Program Changes ($ in millions)

Photovoltaic (PV) *(FY 1997: $60.0, FY 1998: $77.0)* **+$17.0**

Increase of $1.0 million to maintain level of effort in Fundamental Research activities in order to continue investigating semiconductor materials. Increase of $4.0 million to expand R&D partnership in advanced materials and devices work to support thin-film research and engineering. Thin-film technology shows significant promise for reducing energy costs from PV systems. Increase of $12.0 million supports Collector Research and Systems Development activities to fund an assortment of cost-shared projects with the Utility PhotoVoltaic Group (UPVG) for an additional 6 megawatts of installed capacity small and large-scale utility projects; to issue a competitive solicitation for new product development contracts under the PV:Bonus project; and increased efforts in thin-film manufacturing and balance of systems reliability research.

Biopower/Biofuels *(FY 1997: $55.3, FY 1998: $76.5)* **+$21.2**

Increase of $12.1 million in Systems Development will allow four projects selected through the Biomass Power for Rural Development Initiative to enter into construction phase and initiate cost-shared efforts to develop modular biopower systems. Increase of $7.3 million in Ethanol production to fund cost-shared partnerships to design and construct first-of-a-kind cellulose-to-ethanol facilities and to develop highly-productive, low-cost cellulases.

Remaining increase of $1.8 million reflects the net of a variety of small increases and decreases in the other 5 activities within the program.

Wind *(FY 1997: $29.0, FY 1998: $42.9)* **+$13.9**

Increase of $1.9 million in Applied Research is required for planned increases for core research activities, university research and hybrid systems programs. Increase of $11.2 million in Turbine Research to support ongoing subcontracts that were funded in FY 1997 with prior year funds. Increase of $0.8 million in Cooperative Research and Testing to provide additional support for industry testing at the National Wind Technology Center, and expanded certification and standards program activities.

Electric Energy Systems & Storage *(FY 1997: $31.8, FY 1998: $45.5)* **+$13.7**

Increase of $12.7 million for High Temperature Superconductivity to award additional competitive cost-shared contracts under the Superconductivity Partnership Initiative; meet DOE cost-sharing commitment to industrial partner to build pilot manufacturing plant under the Second Generation Wire initiative; and initiate research into second generation wire coils. Increase of $1.0 million for Climate Challenge to establish joint initiative between DOE and electric utility industry to reduce greenhouse emissions.

Nuclear Energy

Mission

The Office of Nuclear Energy, Science & Technology provides technical leadership for domestic and international nuclear security and safety issues and strives to maintain nuclear energy as a viable source to meet future energy requirements and environmental objectives in the United States and other countries.

Program Overview

To fulfill its mission, Nuclear Energy manages efforts to improve the safety of nuclear reactors in the U.S. and abroad; supports development of technologies to address the issues associated with long-term operation of nuclear power plants; provides durable and reliable nuclear power systems to the National Aeronautics and Space Administration (NASA) and National security customers; helps to ensure a reliable supply of medical, industrial and research isotopes; and supports the U.S. nuclear education infrastructure. Besides activities provided for in the Energy Supply R&D appropriation, there are international programs funded in the Other Defense Activities appropriation.

The FY 1998 budget request for Nuclear Energy reflects a major shift in the Department's nuclear energy programs. Over the last few years, the Department's nuclear energy research and development efforts were focused on the development, design, and certification of advanced light water reactors (ALWR). The primary activities of this program have been completed and FY 1997 is the last year of funding for this effort.

The Department's role in nuclear energy R&D now shifts to working together with industry, universities, and the National laboratories to address technical issues related to the aging of the 109 nuclear plants that provide about 22 percent of the Nation's electricity. The Nuclear Energy Security program is a new initiative which will focus on research and development in areas affecting U.S. nuclear plant safety, reliability, and performance; applying unique DOE capabilities to develop technologies to reduce generation of spent fuel in light water reactors and therefore the costs associated with the storage, transportation and repository of spent

nuclear fuel in the United States; and providing additional support for nuclear energy science and education at universities and colleges across the country.

In light of the economic, environmental, and regulatory challenges facing the electric utility industry and the U.S. nuclear industry, in particular, both at home and abroad, the Department is planning to create an independent panel of outside experts to review the Department's current nuclear R&D portfolio and to recommend strategic program reforms to enable the Nation, drawing on the talents and resources of our universities, industry, and the National laboratories, to maximize the return on its nuclear investment in meeting our energy and environmental needs. The Department expects to establish the panel soon, with the goal of having its assessment and recommendations complete in time for consideration in the formulation of the FY 1999 budget later this year.

Another important activity is the Advanced Radioisotope Power Systems program. This is an ongoing effort to provide advanced nuclear power sources to NASA, and National security customers. The development of a domestic backup production capability for molybdenum-99, until more reliable commercial sources become available, is another ongoing program. Nuclear Energy also continues to manage the deactivation of the Experimental Breeder Reactor-II (EBR-II) at Argonne National Lab-West in Idaho and developing electrometallurgical technology as a treatment for DOE spent nuclear fuel. Finally, Nuclear Energy continues to support the U.S. nuclear education infrastructure by offering fellowships to graduate students in nuclear engineering and health physics and providing research grants to university nuclear engineering programs. In FY 1998, Nuclear Energy will provide a total of $12.3 million to support research and education programs at U.S. universities, including those at U.S. historically black colleges and universities and Hispanic-serving institutions.

Beginning in FY 1998, funding for Uranium Program activities is requested in the Energy Supply, Research and Development account. Revenues from the sale of excess uranium will no longer be used to offset the Department's budget request but will be deposited directly into the General Fund of the U.S. Treasury. Uranium Programs will continue to implement the lease agreement between the Department and the U.S. Enrichment Corporation for the enrichment plants in Ohio and Kentucky; monitor Russian conversion of highly enriched uranium to low enriched uranium; manage and dispose of depleted uranium hexafluoride inventories; and support domestic uranium industry revitalization efforts.

Budget Overview

While the level of effort remains fairly consistent, the FY 1998 budget request of $330.7 million for Nuclear Energy in the Energy Supply R&D and Energy Assets Acquisition appropriations increased by $67.8 million over the FY 1997 appropriation. Much of this is attributed to the movement of the Uranium Programs into the Energy Supply R&D account. Beginning in FY 1998, collections from the sale of uranium will no longer be used to offset the budget request. Instead, the revenues will be deposited directly into the General Fund of the U.S. Treasury. In addition, the budget request also supports outyear funding of construction projects for the TRA Landlord and Uranium Programs within the Energy Asset Acquisition Account. The total FY 1998 funding requested by Nuclear Energy for civilian and defense activities is $411.7 million, excluding $647.8 million requested for Naval Reactors.

	FY 1996 Comparable Appropriation	FY 1997 Comparable Appropriation	FY 1998 Request	FY 1997 vs. FY 1998	
Nuclear Energy					
Nuclear energy research and development					
Light water reactor	39,119	38,000	——	-38,000	-100.0%
Advanced radioisotope power system	48,402	38,810	47,000	8,190	21.1%
Nuclear technology research and development	——	——	——	——	——
Oak Ridge landlord	14,400	11,520	9,500	-2,020	-17.5%
Test reactor area landlord	2,000	2,000	3,217	1,217	60.9%
Advanced test reactor fusion irradiation	2,282	800	2,000	1,200	150.0%
University reactor fuel assistance and support	3,492	4,000	6,000	2,000	50.0%
Nuclear energy security	——	——	39,761	39,761	——
Total, Nuclear energy research and development	109,695	95,130	107,478	12,348	13.0%
Termination costs	78,911	79,100	76,035	-3,065	-3.9%
Uranium programs	83,314	56,466	79,135	22,669	40.1%
Isotope support	24,658	12,704	21,704	9,000	70.8%
Program direction	15,117	14,800	16,700	1,900	12.8%
Subtotal, Nuclear Energy	311,695	258,200	301,052	42,852	16.6%
Use of prior year balances	-31,264	-20,331	-3,535	16,796	82.6%
Total, Nuclear Energy	280,431	237,869	297,517	59,648	25.1%
Energy Assets Acquisition — Incremental Funding					
Test reactor area landlord	*1,900*	*1,000*	*4,425*	*3,425*	*342.5%*
Uranium programs	*7,000*	*4,000*	*6,400*	*2,400*	*60.0%*
Total, Incremental Funding	*8,900*	*5,000*	*10,825*	*5,825*	*116.5%*
Total, Nuclear Energy plus Incremental Funding	*289,331*	*242,869*	*308,342*	*65,473*	*27.0%*
Energy Assets Acquisition — Transition to Full Construction Funding					
Test reactor area landlord	——	——	*6,425*	*6,425*	——
Uranium programs	——	——	*15,900*	*15,900*	——
Total, Transition to Full Construction Funding	——	——	*22,325*	*22,325*	——
Total, Nuclear Energy plus Construction	*289,331*	*242,869*	*330,667*	*87,798*	*36.2%*

The FY 1998 budget request reflects the shift in Nuclear Energy's programmatic priorities to include a new initiative that will apply unique DOE capabilities to address technical issues associated with the continued operation of U.S. nuclear power plants, minimize the generation of commercial spent fuel, and provide additional support for educational research and development activities at U.S. universities and colleges. The budget also continues to provide for the production of power sources in support of future NASA and National security missions, and develops a domestic production capability for the vital isotope molybdenum-99 (Mo-99). The request also supports the shutdown of the Experimental Breeder Reactor-II at Argonne National Laboratory and close out of the advanced light water reactor program.

In addition, the Office of Nuclear Energy, Science and Technology is requesting $56.0 million in the Other Defense Activities appropriation for its international programs, which will reduce the risk of nuclear power plant accidents in Central and Eastern Europe and the former Soviet Union, and $25.0 million to continue the development of electrometallurgical technology as a method of treating spent fuel from Departmental reactors in preparation for long-term storage and disposal.

FY 1998 Budget Request

The FY 1998 Energy Supply R&D budget request for Nuclear Energy is $330.7 million, including $33.5 million in the Energy Asset Acquisition Account. FY 1997 is the last year of funding for the Advanced Light Water Reactor program. The request of $47.0 million for the Advanced Radioisotope Power Systems program will provide support for the upcoming NASA Pluto Express mission and continue work to maintain and enhance the Department's ability to provide power sources for space exploration and National security mission. Various facility and landlord costs are funded at a level of $23.6 million, including $10.8 million to provide full up-front funding for construction projects in the Energy Asset Acquisition Account. Nuclear Energy is also providing a total of $12.3 million to support university research and education including the $6.0 million in the university support line. The budget request also includes $16.7 million to meet staffing requirements, including two overseas personnel working on international safety and technology issues. Termination of the EBR-II reactor at Argonne-West continues as scheduled, with defueling expected to be complete at the end of FY 1997 and final shutdown of the facility anticipated in 1998. The Isotope program will be funded at a level of $21.7 million, which will provide for the continued production of isotopes necessary for medical, industrial and research purposes. The increase of $9.0 million will support the modifications of key facilities at Sandia National Laboratories necessary to establish a production capability for the vital medical isotope molybdenum-99 until more reliable commercial sources become available. The FY 1998 budget request also includes $39.8 million to support a new initiative, Nuclear Energy Security, which will focus on improving the safety and reliability of U.S. nuclear power plants.

The request of $79.1 million for Uranium Programs includes $15.7 million to fund safeguards and security requirements and other activities related to the disposition of highly enriched uranium. The Depleted Uranium Hexafluoride Cylinders and Maintenance program will require $17.8 million to annually inspect 22,900 cylinders for corrosion, repair defective cylinders as necessary, and to restack the cylinders to permit 100 percent visual inspection. The Department will also provide funding for priority activities to monitor Russian implementation of the U.S./Russia Highly-Enriched Uranium Purchase Agreement. As mentioned above, revenues generated from this sale will be deposited into the U.S. Treasury's General Fund. In previous years, collections from the sale of excess uranium were used to offset the program's budget requirements. The program also requires $5.6 million to meet staffing requirements, and $22.3 million in the Energy Asset Acquisition Account.

FY 1998 Performance Goals and Measures

Provide Radioisotope Power Systems for U.S. Space Exploration and Other Customers

Design, fabricate and assemble Radioisotope Thermoelectric Generators (RTGs) and Radioisotope Heater Units (RHUs) for delivery to the National Aeronautics and Space Administration (NASA), National security and other users.

FY 1998 success will be measured by:

- Manufacturing RTGs that meet NASA power requirements and supporting the Cassini launch in October, 1997.
- Maintaining program facility operations and capabilities for current and future space and National security missions.

Ensuring the Availability of Isotopes for Industry, Research and Health Care

Produce and distribute radioisotopes and enriched stable isotopes, such as Mo-99, for research and development, medical, industrial, agricultural, and useful applications.

FY 1998 success will be measured by:

- Achieving backup plant capability to routinely produce 10 percent of the U.S. demand for Mo-99 with a capability to produce 100 percent of the U.S. demand for short durations.
- Privatizing selected isotope activities.
- Achieving 95 percent on-time deliveries of customer orders.
- Achieving a 20 percent gross profit (i.e., the difference between revenues and costs of goods and services).
- Responding to customer requests for information within 48 hours.
- Keeping customer complaints to less than 4 percent of all deliveries made.

Maximizing the U.S. Investment in Its 109 Nuclear Power Plants

Develop advanced nuclear technologies to address issues critical to the continued operation of existing nuclear power plants.

FY 1998 success will be measured by:

- Beginning development of advanced instrumentation and controls, in-service inspection systems, and advanced monitoring and repair technologies.
- Assessing technical and regulatory issues related to higher burnup for commercial nuclear fuel.
- Proposing a candidate design for new, higher enriched fuel.

Operating DOE Test and Research Reactors Safely and Effectively

Support customers in the Offices of Energy Research, Naval Reactors, and Isotope Production and Distribution by managing the Advanced Test Reactor in Idaho, High Flux Isotope Reactor in Tennessee, High Flux Beam Reactor in New York, Annular Core Research Reactor in New Mexico, and Brookhaven Medical Research Reactor in New York. Nuclear Energy will manage these facilities in a safe, reliable, economic and environmentally sound manner to achieve the test, research, and isotope production objectives of the Department.

FY 1998 success will be measured by:

- Supporting customer needs by achieving operating efficiency of 90 percent or better for all facilities.
- Achieving superior operational safety as defined by: no more than 6 unplanned outages for all reactors, no violations of any reactor Safety Limits or Limiting Conditions for Operation at any reactor, and no major violation of any environmental protection requirement at any facility.

Highlights of Program Changes ($ in millions)

Advanced Light Water Reactors *(FY 1997: $38.0, FY 1998: $0.0)* **-$38.0**

Advanced Light Water Reactors concludes in FY 1997.

Advanced Radioisotope Power Systems *(FY 1997: $38.8, FY 1998: $47.0)* **+$8.2**

Advanced Radioisotope Power Systems increase will support the development of an advanced power source to support the NASA Pluto Express mission, support a new National security mission, and maintain and enhance the Department's production capability of Pu-238.

TRA Landlord *(FY 1997: $2.0, FY 1998: $3.2)* **+$1.2**

TRA Landlord increase will support additional equipment, GPPs and corrective actions required to maintain the site and facilities in a safe and environmentally sound manner.

Oak Ridge Landlord *(FY 1997: $11.5, FY 1998: $9.5)* **-$2.0**

Oak Ridge Landlord decrease will allow landlord operations to continue on a smaller scale.

ATR Fusion Irradiation *(FY 1997: $0.8; FY 1998 $2.0)* **+$1.2**

ATR Fusion Irradiation funding increase is required to complete the program in FY 1998.

University Nuclear Science Reactor Support *(FY 1997: $4.0, FY 1998: $6.0)* **+$2.0**

University Nuclear Science and Reactor Support funding increase will support 11 additional fellowships over the FY 1997 level granted by the Nuclear Engineering and Health Physics program; allow the expansion of the DOE/Utility Matching Grants program; and enable more students and faculty to participate in the Reactor Sharing program. Also, funds the Nuclear Engineering Research Grants program as recommended by the FY 1997 Energy & Water Development Appropriations Conference Report. While the University Nuclear Science and Reactor Support line item increased by $2.0 million in FY 1998, the Department has committed to provide an increase of $8.3 million over FY 1997 for university research and education programs by directing funds from Nuclear Energy Research and Development accounts to support U.S. universities.

Nuclear Energy Security *(FY 1997 $0.0, FY 1998: $39.8)* **+$39.8**

Nuclear Energy Security is a proposed new start for FY 1998. Funding is required to develop upgraded plant instrumentation and controls at commercial and university reactors to enhance operability, advanced reactor protection systems to improve safety, and new man-machine interface systems at existing U.S. nuclear power plants to increase safety and efficiency. In addition, funding is required to support spent fuel minimization activities specifically to develop models and proposals for advanced fuel forms, design, fabricate and test candidate assemblies; develop an accurate fuel cycle cost model to determine the economic feasibility of

the various options; and to evaluate existing Federal government-developed technologies for potential application to light water reactor fuel.

Termination Costs *(FY 1997 $79.1, FY 1998: $76.0)* **-$3.1**

Termination Costs decreases are in accordance with the schedule for shutdown of the EBR-II and closeout activities for the Advanced Light Water Reactor program. Termination of the GT-MHR program will be completed in FY 1997.

Isotope Support *(FY 1997: $12.7, FY 1998: $21.7)* **+$9.0**

Isotope Support request includes $9.0 million for the initiative to establish U.S. production capability for molybdenum-99 (Mo-99).

Program Direction *(FY 1997: $14.8, FY 1998: $16.7)* **+$1.9**

Program Direction adds responsibility for two overseas personnel working on international safety and technology collaboration issues.

Uranium Programs *(FY 1997: $60.5; FY 1998 $101.4)* **+$40.9**

Uranium Programs funding increase provides for safeguards and security costs that were funded from prior year balances, increased requirements of the HEU transparency program, and a depleted uranium hexafluoride development and demonstration program to reduce the eventual disposal cost and stimulate the use of depleted uranium hexafluoride to reduce the level of material requiring disposal. In addition, revenues will not be used to offset program funding requirements. Collections received from the sale of excess uranium will be deposited into the General Treasury.

Environment, Safety and Health (Non-Defense)

Program Overview

The Energy Supply Research and Development programs of the Office of Environment, Safety and Health are discussed in this section and are concentrated in five business functions: Technical Assistance; National Environmental Policy Act; Health Studies; Management and Administration; and Program Direction.

The Technical Assistance program includes a range of corporate-based functions that support the identification of emerging program vulnerabilities, nuclear and industrial hazards, and improved methods for managing or implementing safety programs. Technical Assistance is comprised of: Line Management Support, which focuses on improving safety, environmental protection, and health programs and ensures the safe operation of the Department's nuclear facilities and hazardous activities; Environment, Safety and Health Guidance, which addresses safety and health issues related to requirements within environmental legislation; and Interagency Representation, which entails monitoring emerging environment, safety and health regulations affecting Departmental operations.

The National Environmental Policy Act program works to ensure that Departmental activities are performed in compliance with the National Environmental Policy Act and related

environmental review requirements by providing pertinent reviews, guidance and workshops. The National Environmental Policy Act program also works to streamline the environmental review process to reduce cost and increase efficiency.

The Health Studies program promotes the health and safety of DOE's workers and the communities surrounding Department sites through the dissemination of information related to the health impacts resulting from Departmental activities. The Non-Defense Health Studies program includes: the State Health Agreement program, in which studies are conducted in partnership with State health departments to assess the impact of past Department of Energy operations; and the Department's support to the Centers for Disease Control and Prevention at the Department of Health and Human Services, which conducts epidemiologic studies for the Department.

The Management and Administration program includes those business functions necessary to provide centralized management and direction for the Office of Environment, Safety and Health, including: Management Planning, which encompasses budgeting and strategic planning; Contract Reform, which strives to institutionalize safety management accountability mechanisms for all Departmental operating contractors; Information Management, which maximizes the sharing and efficient use of environment, safety and health data throughout the Department of Energy complex; and Technical Training and Professional Development, which assures that Environment, Safety and Health staff are properly trained to perform their duties in accordance with Departmental policy and standards.

The Program Direction account includes salaries, benefits, and travel for all Environment, Safety and Health Federal staff, as well as funding for the Office of Environment, Safety and Health's share of the Departmental Working Capital Fund. This fund provides for the non-discretionary costs for services such as space utilization, telephone service, and supplies. The FY 1998 Request marks the first time that all personnel-related costs are consolidated within the Non-Defense account.

Budget Overview

The FY 1998 Request for Non-Defense Environment, Safety and Health programs is $108.9 million, which is $5.6 million, 5 percent, less than the FY 1997 comparable amount. Of the FY 1998 Request, approximately 22 percent is for Technical Assistance, 3 percent is for National Environmental Policy Act, 17 percent is for Health Studies, 16 percent is for Management and Administration, and 42 percent is for Program Direction.

	FY 1996 Comparable Appropriation	FY 1997 Comparable Appropriation	FY 1998 Request	FY 1997 vs. FY 1998	
Environment, Safety and Health					
Office of environment, safety and health (non-def)	104,571	67,968	62,731	-5,237	-7.7%
Program direction	51,081	48,006	46,185	-1,821	-3.8%
Subtotal, Environment, Safety and Health	155,652	115,974	108,916	-7,058	-6.1%
Use of prior year balances	-4,396	-1,421	——	1,421	100.0%
Total, Environment, Safety and Health	151,256	114,553	108,916	-5,637	-4.9%

FY 1998 Budget Request

The Environment, Safety and Health Technical Assistance program is requesting $23.5 million in FY 1998, a decrease of $1.9 million, or 7 percent, below the FY 1997 comparable amount. The program will continue efforts to improve safety and health of workers spanning the design, construction, operation, and decontamination and decommissioning of nuclear weapons production and research related facilities. In addition, the program will provide

direct assistance to improve field safety and health programs; provide interpretations and guidance related to numerous environmental regulations; and provide coordination on emerging environment, safety and health requirements that impact all Departmental activities.

The National Environmental Policy Act program is requesting $3.0 million, a decrease of $0.5 million, or 14 percent, below the FY 1997 comparable amount. The FY 1998 Request supports the timely implementation of Departmental activities by ensuring compliance with the National Environmental Policy Act and related environmental review requirements as necessary prior to project commitment.

The Health Studies program is requesting $18.7 million. In FY 1997, these activities were appropriated within the Defense Environment, Safety and Health account at a level of $19.8 million. The FY 1998 Request reflects a $0.9 million, or 5 percent, decrease from the FY 1997 comparable amount. The request will adequately support the Department's commitments with State health departments and the Department of Health and Human Services to assess the health impacts resulting from Departmental operations.

The Management and Administration program is requesting $17.5 million in FY 1998, a $1.9 million decrease or 10 percent below the FY 1997 comparable amount. The FY 1998 Request supports all management and direction necessary to execute the Environment, Safety and Health mission throughout the Department of Energy complex, including budgeting, financial control, procurement, information management, and training.

The FY 1998 Request provides $46.2 million for Program Direction. As all Environment, Safety and Health Program Direction requirements have been consolidated within this Non-Defense account, the FY 1998 Request reflects an overall reduction of approximately $1.8 million, or 4 percent, below the total FY 1997 appropriated amount. The FY 1998 Request provides for salaries, benefits and travel for a total of 391 full time equivalents (FTEs), a decrease of 24 FTEs from the FY 1997 staffing level. The FY 1998 Request also includes $5.5 million for the Working Capital Fund, an approximate $0.7 million, or 14 percent, increase over the comparable amount provided in FY 1997.

FY 1998 Performance Goals and Measures

Prevent worker accidents and save time and resources through early engagement of DOE workers and professionals in planning the work and identifying hazards.

FY 1998 success will be measured by:

- Reducing the time spent in work planning, with a corresponding reduction in cost, without compromising safety and health.
- Decreasing lost workdays due to occupational illness or injury (on an annual basis).

Incorporate Defense Nuclear Facilities Safety Board Recommendation 95-2 Safety Management System clauses in four major Management and Operating contracts.

FY 1998 success will be measured by:

- Inclusion of strong and effective safety management systems provision in an additional six Management and Operating contracts to protect environment, safety and health.

Highlights of Program Changes ($ in millions)

Technical Assistance *(FY 1997: $25.4, FY 1998: $23.5)* **-$1.9**

Technical Assistance decreases due to the completion and streamlining of numerous efforts within the areas of Line Management Support and Interagency Representation, as well as the transfer of the Packaging and Certification program to the Office of Environmental Management. These decreases are offset in part by increased efforts in the Enhanced Work Planning process and specialized safety engineering assistance.

National Environmental Policy Act *(FY 1997: $3.5, FY 1998: $3.0)* **-$0.5**

National Environmental Policy Act decreases reflect reduced technical assistance in support of programmatic environmental impact statements, which will largely be completed in FY 1997.

Health Studies *(FY 1997: $19.8, FY 1998: $18.7)* **-$1.1**

Health Studies decrease due to the nearing completion of the State health agreements.

Management and Administration *(FY 1997: $19.4, FY 1998: $17.5)* **-$1.9**

Management and Administration decreases due to the elimination of the nuclear safety training coordination and assistance program, and reduced efforts in software development and certain contract reform activities.

Program Direction *(FY 1997: $48.0, FY 1998: $46.2)* **-$1.8**

Program Direction decreases, which results from the reduction of 24 FTEs. This is offset, in part, by the Working Capital Fund being increased by nearly $0.7 million based on the Office of Human Resources and Administration's funding projections.

Energy Research

Mission

The mission of the Office of Energy Research programs included in the Energy Supply Research and Development appropriation involves basic research in energy related areas, and provides the science that triggers and drives technological development within the Department. The second element of the mission involves the High Energy and Nuclear Physics programs, which conduct fundamental research in energy, matter, and the basic forces of nature. Research in both missions is conducted by both DOE National laboratories and university researchers, and the mission includes operation, maintenance, and construction of new scientific facilities.

Program Overview

Office of Energy Research programs are funded in four separate appropriation accounts. The Energy Asset Acquisition appropriation funds line-item construction projects which support programs in the Energy Supply R&D appropriation; the Science Asset Acquisition appropriation provides line-item construction funding for General Science and Research appropriation programs. The four appropriations reflect the dual mission of the office. Research into the fundamental nature of matter and energy is funded in the General Science and Research appropriation, described in a later section of the highlights. Office of Energy Research programs funded by the Energy Supply R&D appropriation conduct basic research

in energy related science areas. The basic research and technology programs of the Department are working together to improve integration of their efforts on this important energy problem.

Research is generally of a long-term, fundamental nature. The fundamental research includes providing a scientific base for future energy options, a science base for fusion energy, and a science base for identifying, understanding, and anticipating the long-term health and environmental consequences of energy production, development, and use. There are also several associated activities which support laboratory infrastructure management, and evaluation of DOE research programs and projects. In addition, the Office of Energy Research provides world-class scientific facilities available for merit-reviewed researchers from DOE National Laboratories, universities, and the private sector.

The Basic Energy Sciences program supports high quality research to develop and improve energy technologies, provide world class scientific facilities, and design and build advanced facilities for future research needs. Large National Laboratory scientific facilities, staffed by laboratory, university, and industry researchers, are used to conduct investigations in materials and chemical sciences, engineering and geosciences, and energy biosciences as well as in many other disciplines. Capital equipment and construction supports research activities at the user facilities. The program funds the operation and maintenance of these state-of-the-art scientific user facilities. Facilities include research reactors, accelerators, x-ray and ultraviolet light sources, a laser facility for combustion research, and other specialized facilities.

Biological and Environmental Research has two foci: environment and health research. Environmental activities focus on the consequences of energy production and use, risk assessment, transport of pollutants, environmental restoration and bioremediation technologies and includes a substantial climate change research program. For example, the Department continues its commitment to important scientific inquiry into the basic understanding of the global climate and the carbon cycle. This year, there is expanded emphasis on carbon sequestration and basic science that underpins the exploration of related innovative energy futures. The program supports operation of the Environmental Molecular Sciences Laboratory for bioremediation research. Health related programs include understanding and mitigating the potential health effects of energy development; waste cleanup; cellular, molecular and structural biology for understanding energy related health effects, and for biotechnology research; the human genome project; and, diagnostic and therapeutic medical applications of DOE technologies.

Fusion Energy Sciences seeks to provide a science base for fusion as a potential energy source of the future. The program supports several fusion reactor facilities, and both laboratory and university based experimental and theoretical research teams. The program has been restructured to concentrate on the scientific principles involved in fusion rather than on fusion technologies. The mission of the program is “Acquire the knowledge base needed for an economically and environmentally attractive fusion energy source.” The program goal is to work collaboratively within the international community to develop the scientific basis for a fusion energy development program. The program also fosters the advancement of plasma science which has applications in other fields of science and near-term industrial uses.

The Computational and Technology Research program supports research in: 1) Mathematical, Information and Computational Sciences, which studies advanced computing applications and techniques, and provides high performance computer access to DOE researchers including the next generation internet initiative; 2) Laboratory Technology Research, which funds technology research collaborations and other partnerships; and 3) Advanced Energy Projects, which supports promising, but not yet matured technologies.

The Office of Energy Research also supports the Multiprogram Energy Laboratories-Facilities Support program, which provides funding to support the general purpose infrastructure of the five Energy Research multiprogram laboratories; and the Energy Research Analyses program which evaluates DOE research projects.

Budget Overview

The FY 1998 request for the Office of Energy Research is $2,525.0 million. Of this $890.9 million is for the General Science and Research appropriation, and $126.9 million for the Science Asset Acquisition appropriation. The remaining $1,522.2 million is split between the Energy Supply Research and Development appropriation ($1,471.0 million) and the Energy Asset Acquisition appropriation ($51.3 million). Superconducting Super Collider prior year funds ($15.0 million) from the General Science and Research account are used to offset the Energy Supply Research and Development request. Highlights of the Energy Supply R&D request are: Biological and Environmental Research begins full operation of the Environmental and Molecular Sciences Laboratory and increases funding for the Human Genome Program; Fusion Energy Sciences increases funding for fabrication of the National Spherical Torus Experiment and continues support for the International Thermonuclear Experimental Reactor; Basic Energy Sciences begins pre-Title I design activities for the National Spallation Neutron Source and funds an instrumentation enhancement at Los Alamos Neutron Science Center; and funding is provided in the Computational and Technology Research program for the Next Generation Internet initiative.

	FY 1996 Comparable Appropriation	FY 1997 Comparable Appropriation	FY 1998 Request	FY 1997 vs. FY 1998	
Energy Research					
Biological and environmental research	337,148	352,962	376,710	23,748	6.7%
Fusion Energy	238,940	232,500	225,000	-7,500	-3.2%
Basic energy sciences	637,203	640,675	661,240	20,565	3.2%
Computational and technology research	139,440	153,500	175,907	22,407	14.6%
Energy research analyses	3,337	2,000	1,500	-500	-25.0%
Multiprogram energy labs - facility support	6,506	——	——	——	——
University and science education programs	19,252	——	——	——	——
Program direction	33,484	30,600	30,600	——	——
Small business innovation research (SBIR)	66,763	——	——	——	——
Subtotal, Energy Research	1,482,073	1,412,237	1,470,957	58,720	4.2%
Use of prior year balances	-36,741	-21,053	——	21,053	100.0%
Total, Energy Research	1,445,332	1,391,184	1,470,957	79,773	5.7%
Energy Assets Acquisition — Incremental Funding					
Biological and environmental research	*62,620*	*36,113*	——	*-36,113*	*-100.0%*
Basic energy sciences	*5,186*	*9,000*	*7,000*	*-2,000*	*-22.2%*
Multiprogram energy labs - facility support	*27,538*	*21,260*	*21,260*	——	——
Total, Incremental Funding	*95,344*	*66,373*	*28,260*	*-38,113*	*-57.4%*
Total, Energy Research plus Incremental Funding	*1,540,676*	*1,457,557*	*1,499,217*	*41,660*	*2.9%*
Energy Assets Acquisition — Transition to Full Construction Funding					
Basic energy sciences	——	——	*4,000*	*4,000*	——
Multiprogram energy labs - facility support	——	——	*19,007*	*19,007*	——
Total, Transition to Full Construction Funding	——	——	*23,007*	*23,007*	——
Total, Energy Research plus Construction	*1,540,676*	*1,457,557*	*1,522,224*	*64,667*	*4.4%*

FY 1998 Budget Request

Biological and Environmental Research

The FY 1998 budget request for Biological and Environmental Research is $376.7 million, a net decrease of $12.4 million from FY 1997. The Life Sciences subprogram supports increases in the Human Genome program (FY 1997 $78.9 million; FY 1998 $85.1 million) resulting in a total output of approximately 40 Mb of DNA base sequences in FY 1998, an increase of 10 Mb per year. Funding will support research to better understand the archae - a third form of life, and to increase the number of microbial genome sequences. Support for Structural Biology and Molecular and Cellular Biology programs also increases. Funding for the Environmental Processes subprogram, also known as the Department's high priority climate change research program, decreases in FY 1998 (FY 1997 $112.3 million; FY 1997 $110.1 million) due to completion of equipment installation and field experiments and the transition of ocean-based research programs to laboratory-based programs. In the Environmental Remediation subprogram funding for bioremediation research increases (FY 1997 $21.2 million; FY 1998 $28.1 million) for the initiation of the first field research center and development of cost-effective technologies and strategies to remediate contaminated environments. The program also provides first year funding for the Environmental Molecular Sciences Laboratory. Funding for the Lawrence Berkeley National Laboratory's Human Genome Laboratory and the Environmental Molecular Sciences Laboratory at Pacific Northwest National Laboratory was completed in FY 1997, and both begin full operation in FY 1998.

Fusion Energy Sciences

The FY 1998 budget request for Fusion Energy Sciences is $225.0 million, a $7.5 million decrease from the FY 1997 appropriation. The program will focus on fusion science, including fusion plasma and general plasma experimental research and alternative concepts to tokamaks. Funding for theoretical research declines. The Tokamak Fusion Test Reactor is being placed in a mothball status in FY 1997, making funding of $24.8 million available for enhanced operation of the Alcator C-Mod and the DIII-D facilities, and for the National Spherical Torus Experiment (NSTX). Princeton will continue fabrication of the NSTX in FY 1998 (FY 1997 $3.5 million; FY 1998 $11.3 million), a project which will address fundamental plasma and fusion science issues in an ultra compact tokamak. Upgrade of the DIII-D facility is also continued (FY 1997 $1.5 million; FY 1998 $2.5 million). DOE will continue participation in the International Thermonuclear Experimental Reactor (ITER) Engineering Design Activities (EDA) (FY 1997 $54.7 million; FY 1998 $54.5 million); culmination of the EDA in FY 1998 will provide a basis for a decision on construction.

Basic Energy Sciences

The FY 1998 budget request for Basic Energy Sciences is $672.2 million, a net increase of $22.6 million over FY 1997. Funding will support continuation of ongoing research activities and operation of all user facilities. Materials and Chemical Sciences will fund high-priority, peer reviewed research, while also providing support for ten scientific user facilities. Operation of user facilities will be restored to the FY 1996 level (FY 1998 $256.0 million). Increased funding is provided for capital equipment for the design and fabrication of instrumentation for the Short Pulse Spallation Source enhancement at the Los Alamos Neutron Science Center (FY 1998 $4.5 million) and for the National Spallation Neutron

Source (FY 1997 $7.7 million; FY 1998 $23.0 million). The new Energy Assets Acquisition account will fully fund related construction on the Combustion Research Facility, Phase II ($11.0 million) at Sandia National Laboratory Livermore, California (SNL/L).

Computational and Technology Research

The FY 1998 budget request for Computational and Technology Research is $175.9 million, an increase of $22.4 million. The Mathematical, Information and Computational Sciences (MICS) program increases $35.0 million for research in support of the President's Next Generation Internet Initiative. This initiative will: 1) connect universities and National laboratories with high speed networks that are 100-1000 times faster than today's internet; 2) promote experimentation with the next generation of networking technologies; and 3) demonstrate new applications that meet important National goals and missions. The increase to MICS is partially offset by reductions in Laboratory Technology Research (-$8.5 million) and Advanced Energy Projects (-$4.1 million).

Multiprogram Energy Laboratories-Facilities Support

The FY 1998 request for $40.3 million is funded in the Energy Assets Acquisition account. Funding for this program is increased to accomodate full-funding for four on-going projects and three new subprojects. (FY 1997 $21.3 million; FY 1998 $40.3 million)

Energy Research Analyses

Funding reductions for Energy Research Analyses (FY 1997 $2.0 million; FY 1998 $1.5 million) will result in fewer peer reviews of DOE programs.

Program Direction

This program funds personnel who staff the Biological and Environmental Research, Fusion Energy, Basic Energy Sciences, and Computational and Technology Research programs; and support services and other related expenses.

FY 1998 Performance Goals and Measures

The Office of Energy Research (OER) is working to formalize the application of performance measures to its research programs during FY 1997. Some preliminary measures are included in the detailed budget document. The resultant performance goals and measures will be implemented in FY 1998. It is anticipated that the process will involve the elements described below.

The OER will use performance measures to evaluate the basic activities that characterize this research. These activities will be measured in a number of ways, which separate naturally into four categories: 1) peer review; 2) metrics (i.e., things that can be counted); 3) customer evaluation and stakeholder input, and; 4) qualitative assessments, such as historical retrospectives and annual program accomplishments.

Highlights of Program Changes ($ in millions)

Biological & Environmental Research *(FY 1997: $389.1, FY 1998: $376.7)* -$12.4

- Funding for Congressional direction for Indiana School of Medicine and Oregon Health Sciences University is not continued in FY 1998. -12.7

- Increases funding for the Human Genome program. +7.2
- Reduced global climate change activities related to ocean research. -2.2
- Enhance bioremediation research. +6.9
- Increase in funding for first full year of operations for the Environmental Molecular Sciences Laboratory (EMSL) (+$24.2) and decrease for completion of construction for EMSL (-$35.1). -10.9
- Complete funding for construction of the Human Genome Laboratory. -1.0
- Net of other programmatic changes. +0.3

Fusion Energy Sciences *(FY 1997: $232.5, FY 1998: $225.0)* **-$7.5**

- TFTR placed in Mothball status in FY 1997. -24.8
- Increased funding for operation and research at DIII-D and Alcator C-Mod. +9.1
- Fabrication of the NSTX. +7.6
- Reduced funding for theory. -7.4
- Enhance alternative concepts experiments. +3.7
- Upgrade of the DIII-D. +0.9
- Increase for technology development. +3.0
- Net of other funding changes. +0.4

Basic Energy Sciences *(FY 1997 $649.7; FY 1998 $672.2)* **+$22.5**

- Increase in construction to provide full funding for the Combustion Research Facility (FY 1997: $9.0, FY 1998: $11.0) in the new Energy Asset Acquisition account. +2.0
- Increase provides capital equipment funding for the design and fabrication of instrumentation for the Short Pulse Spallation Source enhancement at Los Alamos Neutron Science Center. +4.5
- Funding for the design of the National Spallation Neutron Source (NSNS) is increased from FY 1997 $7.7 million to FY 1998 $23.0 million. +15.3
- Restores facility operations to the FY 1996 level. The level of funding decreased in FY 1997 as a result of Congressional direction without additional funds. +12.0
- Funding for Congressional direction for the Rose Hulman Institute of Technology; Alabama Mineral Research Center, Tuscaloosa; and University of Alabama Birmingham is not continued in FY 1998. -16.6
- Net of other programmatic changes. +5.4

Computational & Technology Research *(FY 1997 $153.5; FY 1998 $175.9)* **+$22.4**

- ❖ Increase funding to initiate the Next Generation Internet Initiative. +35.0
- ❖ Laboratory Technology Research cooperative agreements and technical assistance enhancements. +1.5
- ❖ Complete funding for Congressionally mandated University of Southwestern Louisiana project in FY 1997. -9.7
- ❖ Reduced Advanced Energy Projects. -4.1
- ❖ Net of other funding changes. -0.3

Multiprogram Energy Laboratories–Facilities Support +$19.0

- ❖ Increase funding for full request of construction projects.

Energy Research Analysis -$0.5

- ❖ Decrease level of peer review.

Program Direction —

- ❖ Fund 42 fewer FTEs. -1.8
- ❖ Increase in support services and related expenses. +1.8

Other Energy Programs

	FY 1996 Comparable Appropriation	FY 1997 Comparable Appropriation	FY 1998 Request	FY 1997 vs. FY 1998	
Other Energy Programs					
Technical information management					
Technical information management program	3,160	3,300	3,427	127	3.8%
Program direction	8,800	8,700	8,560	-140	-1.6%
Total, Technical information management	11,960	12,000	11,987	-13	-0.1%
In-house energy management	342	——	——	——	——
Field offices and management	101,277	98,400	100,233	1,833	1.9%
Subtotal, Other Energy Programs	113,579	110,400	112,220	1,820	1.6%
Use of prior year balances	-180	-163	——	163	100.0%
Total, Other Energy Programs	113,399	110,237	112,220	1,983	1.8%

Technical Information Management

Mission

The Technical Information Management Program collects, manages and disseminates scientific and technical information resulting from Department of Energy research and

development and environmental programs. The program also provides worldwide energy scientific and technical information to DOE and U.S. industry, academia and the public.

FY 1998 Budget Request

Funding for the program will be maintained at the FY 1997 level of $12.0 million. Funding will continue ongoing research and development information collection, and information and management of classified information.

Field Operations

Mission

The Field Operations Account enables the four Multi-Purpose Field Operations Offices (Chicago, Idaho, Oak Ridge, Oakland) to provide centralized administrative and managerial support to programmatic activities at 20 locations nationwide.

Program Overview

The activities conducted at the four Operations Offices include administrative assistance, contract and procurement management, environment safety and health, financial management, physical science, legal services, program analysis, personnel and other services enabling the accomplishment of programs' direct missions and goals. In addition, the Federal employees conduct oversight of activities performed by the 40,100 management and operating contractor employees at 20 locations nationwide.

Budget Overview

To perform the requisite services in FY 1998, 958 Full-Time Equivalents (FTEs) are anticipated in accordance with the FY 1995- FY 2000 Strategic Alignment staffing targets. The FTE spread for FY 1998 is: Chicago - 259 FTEs; Idaho - 130 FTEs; Oakland - 201 FTEs; and Oak Ridge - 368 FTEs. Compliance with this Departmental initiative has effected a 14 percent reduction in FTEs since FY 1995 and will yield a 22 percent reduction in field Federal employment through FY 2000. Operating expenses have also been reduced to conform with travel and support service contractor ceilings set by the Department's Strategic Alignment Initiative.

FY 1998 Budget Request

For FY 1998, the four Operations offices request $100.2 million, an increase of $1.8 million towards inflation and pay increases, over the FY 1997 Enacted Appropriation of $98.4 million. The request provides: $65.8 million for salaries and benefits; $1.5 million for travel; $5.2 million for support services; and, $27.7 million for operating expenses.

FY 1998 Performance Goals and Measures

To more effectively and efficiently serve the program organizations within the field operations offices

FY 1998 success will be measured by:

- Downsizing 37 positions from the FY 1996 level to the FY 1998 target.
- Consolidating accounting databases of the eight satellite offices at the Oak Ridge Financial Service Center.
- Beginning integration of systems to further develop corporate information systems at 25 percent of the offices.
- Transmit 90 percent of all payments via Electronic Funds Transfer at Oak Ridge.
- Implementing a paperless travel process using Travel Manager, an automated travel document processing system at Oak Ridge.

- Increasing the aggregate employee-to-supervisor ratio to 14:1 by consolidating offices and de-layering organizational structure.
- Implementing a "360 Degree" performance review process for all GS employees at two offices.
- Implementing an automated small purchase system at Chicago and Oak Ridge.
- Reducing the number of on-site reviews required due to deficient Laboratory self-assessments by incorporating key performance measures for inclusion in contract modifications.
- Completing training 50 percent of Operations Office's acquisition and program management personnel on information model use.
- Reducing uncosted balances within a reasonable range between 5-10 percent of budget authority.
- Returning 50 percent of excess lands identified by the Inspector General for public use.

Highlights of Program Changes ($ in millions)

Chicago **+$0.3**

The increase reflects $0.6 million of inflation adjustments in technical services and operating expenses associated with utilities, office space assessments, and telecommunications netted by a $0.3 million decrease in salary and benefits indicative of 10 less FTEs.

Idaho **+$0.5**

The increase reflects $0.2 million to support two additional FTEs and a 3.0 percent pay raise; $0.3 million inflation adjustments in technical services and operating expenses associated with rent, utilities, and maintenance, and a decrease in travel.

Oak Ridge **+$0.8**

The increase reflects an additional $0.8 million to cover a 3.0 percent pay raise in salary and benefits and a minimal increase to partially offset inflation operations expenses.

Oakland **+$0.3**

The increase reflects $0.4 million of inflation adjustments in operating expenses associated with utilities, telecommunications, automated data processing support, additional travel requirements and $0.1 million decrease in salary and benefits.

Environmental Restoration & Waste Management (Non-Defense)

Budget Overview

The FY 1998 budget request for Non-Defense Environmental Management of $684.7 million is a $96.4 million, 16 percent, increase over the FY 1997 comparable amount. Of the request,

approximately 67 percent is for Environmental Restoration, 22 percent is for Waste Management, and 11 percent is for Nuclear Material and Facility Stabilization.

	FY 1996 Comparable Appropriation	FY 1997 Comparable Appropriation	FY 1998 Request	FY 1997 vs. FY 1998	
Environmental Restoration & Waste Mgmt. (Non-Defense)					
Environmental restoration	358,498	328,000	457,625	129,625	39.5%
Waste management	170,489	177,994	153,004	-24,990	-14.0%
Nuclear material and facility stabilization	78,765	73,100	71,758	-1,342	-1.8%
Subtotal, Environmental Restoration & Waste Mgmt.	607,752	579,094	682,387	103,293	17.8%
Use of prior year balances	-24,411	-3,183	——	3,183	100.0%
Total, Environmental Restoration & Waste Management	583,341	575,911	682,387	106,476	18.5%
Energy Assets Acquisition — Incremental Funding					
Waste management	*7,297*	*5,864*	*1,900*	*-3,964*	*-67.6%*
Nuclear material and facility stabilization	*4,048*	*6,571*	*397*	*-6,174*	*-94.0%*
Total, Energy Assets Acquisition	*11,345*	*12,435*	*2,297*	*-10,138*	*-81.5%*
Total, Environmental Management plus construction	*594,686*	*588,346*	*684,684*	*96,338*	*16.4%*

The FY 1998 request includes $2.3 million for construction funds associated with the above programs and is contained within the Energy Assets Acquisition appropriation. This request, which is $10.1 million less than the FY 1997 comparable amount that was appropriated within the Energy Supply Research and Development appropriation, provides full funding for one line item project at Oak Ridge and one at Idaho.

FY 1998 Budget Request

Of the $682.4 million requested for Non-Defense EM in Energy Supply R&D in FY 1998, $457.6 million is for Environmental Restoration activities, which is $129.6 million, or 40 percent, above the FY 1997 comparable amount. This increase is to accelerate cleanup at the various FUSRAP sites with a goal of completing cleanup by 2002. EM will work with the local communities and regulators to achieve this goal. The Environmental Restoration program continues efforts in FY 1998 to identify the sources, nature and extent of contamination to more accurately determine relative risk, scope and cost of projects. The program will also increase the cost-effectiveness of assessment efforts by establishing objectives before characterization. However, greater emphasis is placed on doing fewer studies and accomplishing more actual cleanup in FY 1998.

The Waste Management program's request of $153.0 million continues ongoing efforts to reduce long-term risk by optimizing treatment and disposal operations and to work with regulators and stakeholders to improve compliance and reduce costs. This amount is $25.0 million, 14 percent, less than the FY 1997 comparable amount. Priority efforts supported by the FY 1998 request include completion of Phase I efforts - treatment of high-level waste at the West Valley Demonstration Project in New York (FY 1997 $119.6 million; FY 1998 $112.2 million) to reduce risk associated with the storage of liquid high-level waste, and implementing site treatment plans as negotiated through the Federal Facilities Compliance Act process. The program will also perform three re-engineering pilots at Argonne National Lab - West, Fermilab and Stanford Linear Acceleration Center, turning over responsibility and funding to the generators for newly generated waste. It is believed this will reduce the cost of waste management at these sites.

The Nuclear Material and Facility Stabilization (NMFS) program's request is $71.8 million in FY 1998. This amount is $1.3 million, 2 percent, less than the FY 1997 comparable amount. The Nuclear Material and Facility Stabilization program will continue to safeguard the public

and the environment from possible contamination from surplus facilities and materials. As the necessary surveillance and maintenance and landlord activities are performed, the program continues to drive these requirements to a minimum by performing stabilization and deactivation activities. NMFS conducts these activities at many facilities across the DOE complex, including Building 324 B-Cell at Richland, the Material Test Reactor at Idaho, the Semi-Works Cave Area at Mound and various surplus buildings at Idaho, Richland and Oak Ridge. The Department plans to evaluate FFTF's potential to meet part of the Nation's tritium requirement. The Department may submit a budget amendment to place the FFTF in standby condition. NMFS also manages the Department's Spent Nuclear Fuel, Transportation and Hazardous Materials and Packaging Safety, and Pollution Prevention programs.

FY 1998 Performance Goals and Measures

Environmental Restoration

The goal of the Environmental Restoration program is to protect human health and the environment from risks posed by inactive and surplus DOE facilities and contaminated areas.

FY 1998 success will be measured by:

- Completing 52 of the total 88 sites (59 percent) within the non-defense Environmental Restoration program by completing the UMTRA Surface Program projects and completion of one FUSRAP site, for a total of 26 out of 46 FUSRAP sites.

Waste Management

The goal of the Waste Management program is to protect the public health and safety from the risks posed by the Department's wastes by managing the treatment, storage and disposal of wastes. (More details regarding measurement of these goals will become available with the finalization of the Environmental Management Ten Year Plan.)

FY 1998 success will be measured by:

- Volumes of waste treated, stored and disposed, including production of about 125 canisters at the West Valley Demonstration Project.
- Implementation of Site-Treatment Plans as negotiated through the Federal Facility Compliance Act process.
- Implementation of cost savings initiatives such as re-engineering the management of newly generated waste at Argonne-West, Fermilab, and the Stanford Linear Accelerator Center.

Nuclear Material and Facility Stabilization

The goal of the Nuclear Material and Facility Stabilization program is to reduce the risks associated with unstable excess radioactive and hazardous wastes and materials at the Department's sites and to reduce the maintenance costs resulting from stabilizing materials and deactivating buildings awaiting decommissioning or final disposition. (More details regarding measurement of these goals will become available with the finalization of the Environmental Management Ten Year Plan.)

FY 1998 success will be measured by:

- Quantity of radioactive and hazardous wastes stabilized.
- Quantity of Spent Nuclear Fuel stabilized.
- Number of buildings deactivated.

Highlights of Program Changes ($ in millions)

Environmental Restoration *(FY 1997: $328.0, FY 1998: $457.6)* **+$129.6**

- The Uranium Mill Tailings Remedial Action (UMTRA) Surface and Ground Water program decreases from $49.8 million in FY 1997 to $33.8 million in FY 1998 in accordance with its planned completion of the UMTRA Surface program in FY 1998. -16.0
- The Formerly Utilized Sites Remedial Action Project (FUSRAP) cleanup activities increases from $75.1 million in FY 1997 to $182.1 million in FY 1998 as part of Environmental Restoration's goal to accelerate remediation completions at the FUSRAP sites by 2002. +107.0
- Funding for the Oak Ridge National Laboratory increases from $103.9 million in FY 1997 to $121.3 million in FY 1998 due to increased activities which primarily focus on stabilizing and deactivating the Molten Salt Reactor Experiment (MSRE), along with increased remediation efforts at Weldon Springs. +17.4
- Funding at Oakland increases from $15.4 million in FY 1997 to $31.6 million in FY 1998 primarily due to the transfer of Energy Technology Engineering Center from the Nuclear Material and Facility Stabilization program, characterization activities at the GE site, and remedial actions at Lawrence Berkeley National Laboratory and the Laboratory for Energy-Related Health Research. +16.2

Waste Management *(FY 1997: $178.0, FY 1998: $153.0)* **-$25.0**

- Funding for the West Valley Demonstration Project decreases from $119.6 million in FY 1997 to $112.2 million in FY 1998, which reflects completion of Phase I solidification activities, and reduced efforts in the areas of plant water infiltration abatement, Phase II transition costs, facility maintenance and site support. -6.4
- Funding for the Chicago Operations Office decreases from $22.2 million in FY 1997 to $17.7 million in FY 1998 due to the transfer of funding and responsibility for newly-generated wastes at the Fermilab and Argonne National Lab to the Offices of Energy Research and Nuclear Energy, respectively. This initiative, known as re-engineering, is designed to make the waste generators more responsible for waste, thereby reducing costs. -4.5
- Funding for the Oak Ridge Operations Office decreases from $8.6 million in FY 1997 to $6.3 million because the full cost of the Process Waste Treatment Facility will be assumed in the Defense Waste Management request beginning in FY 1998. -2.3
- Funding for the Oakland Operations Office decreases from $11.9 million in FY 1997 to $10.8 million in FY 1998, which reflects the transfer of funding and responsibility for newly-generated wastes at the Stanford Linear Accelerator Center to the Office of Energy Research. -1.1
- Funding for the Richland Operations Office decreases from $10.5 million in FY 1997 to $0.0 in FY 1998 due to the transfer of the B-Cell Cleanout Project and

support of Building 324 and 327 to the Nuclear Materials and Facility Stabilization program. -10.5

Nuclear Material & Facility Stabilization *(FY 1997: $79.7, FY 1998: $72.2)* **-$7.5**

- The Chicago Operations Office funding increases from $0.4 million in FY 1997 to $1.7 million in FY 1998, which reflects the transfer of the Packaging Certification and Transportation Safety work scope from the Office of Environment, Safety and Health (+$1.7 million) and a minor decrease in pollution prevention activities (-$0.4 million). +1.3
- Funding for the Idaho Operations Office decreases from $4.3 million in FY 1997 to $2.5 million in FY 1998. Deactivation activities are reduced due to completion of 85 percent of the workscope associated with the Materials Test Reactor Canal deactivation project (-$1.2 million). Stabilization activities are reduced due to the near completion of the long-term storage of TMI-2 fuel project (-$0.4) -1.8
- The Oakland Operations Office funding level reduces from $14.3 million in FY 1997 to $2.8 million in FY 1998. This decrease is attributable to the transfer of surveillance and maintenance and deactivation activities associated with the Energy Technology Engineering Center to Environmental Restoration (-$13.4 million). Packaging Certification and Transportation Safety work scope has been transferred from the Office of Environment, Safety and Health (+$1.9 million). -11.5
- Funding for the Oak Ridge Operations Office decreases from $12.2 million in FY 1997 to $9.0 million for FY 1998. Work scope for the Packaging Certification and Transportation Safety program has been transferred from the Office of Environment, Safety and Health (+$0.6 million). Surveillance and maintenance requirements have been reduced due to the completion of deactivation activities associated with the Isotope facilities and the high ranking assets from the Surplus Facility Inventory Assessment program (-$3.3 million). Also, deactivation funding is reduced due to the completion of activities in FY 1997 (-$0.5 million). -3.2
- The Ohio Field Office funding level increases from $2.1 million in FY 1997 to $3.2 in FY 1998 in order to fully fund the Spent Nuclear Fuel program at Ohio and to work with the Nuclear Regulatory Commission to certify the shipment casks that will be used to ship fuel to Idaho. +1.1
- The Richland Operations Office funding level increases from $39.7 million in FY 1997 to $52.5 million in FY 1998. The majority of the increase is due to the transfer of deactivation activities for Building 324 B Cell Cleanout from the Office of Waste Management (+$11.5 million). Also, deactivation activities that were deferred from FY 1997 will be performed in FY 1998 (+$1.0 million). +12.8

Energy Assets Acquisition **-$10.1**

The Energy Supply Research and Development appropriation no longer includes funding for line-item capital construction projects for the Environmental Management program. The FY 1998 request of $2.3 million for the construction funds associated with the above programs is contained within the Energy Assets Acquisition appropriation. The FY 1998 request is $10.1 million less than the FY 1997 comparable amount.

- Waste Management - The $1.9 million requested in FY 1998 is for the completion of the Bethel Valley Federal Facility Agreement upgrade project at Oak Ridge. The FY 1998 request is $4.0 million less than the FY 1997 comparable amount due to the completion of two projects (Rehabilitation of waste management building 306 at Argonne, Liquid low-level waste collection and transfer system upgrade). -4.0

- Nuclear Material and Facility Stabilization - The FY 1998 request of $0.4 million is for the completion of the Long-term storage of TMI-2 fuel project at Idaho. The FY 1998 request is $6.2 million less than the FY 1997 comparable amount due to the progress made on the TMI-2 fuel project. -6.2

Energy Asset Acquisition

As part of an Administration-wide focus on improving the planning, budgeting and acquisition of capital assets, two new changes were introduced in the FY 1998 budget: three new accounts were created for line-item construction projects and full funding through regular appropriations is requested for programmatically-viable segments of all new and on-going line-item capital projects. The Energy Assets Acquisition appropriation was created for construction projects previously funded within the Energy Supply Research and Development appropriation. A total of $88.9 million is requested for FY 1998 for two new and ten on-going projects.

	FY 1996 Comparable Appropriation	FY 1997 Comparable Appropriation	FY 1998 Request	FY 1997 vs. FY 1998	
Energy Assets Acquisition					
Solar and Renewable Resources Technologies					
Solar Energy					
National renewable energy laboratory	1,500	2,800	2,200	-600	-21.4%
Nuclear Energy					
Nuclear energy research and development					
Test reactor area landlord	1,900	1,000	10,850	9,850	985.0%
Uranium programs	7,000	4,000	22,300	18,300	457.5%
Total, Nuclear Energy	8,900	5,000	33,150	28,150	563.0%
Energy Research					
Biological and environmental research	62,620	36,113	——	-36,113	-100.0%
Basic energy sciences	5,186	9,000	11,000	2,000	22.2%
Multiprogram energy labs - facility support	27,538	21,260	40,267	19,007	89.4%
Total, Energy Research	95,344	66,373	51,267	-15,106	-22.8%
Environmental Restoration & Waste Mgmt. (Non-Defense)					
Waste management	7,297	5,864	1,900	-3,964	-67.6%
Nuclear material and facility stabilization	4,048	6,571	397	-6,174	-94.0%
Total, Environmental Restoration & Waste Mgmt.	11,345	12,435	2,297	-10,138	-81.5%
Total, Energy Asset Acquisition	117,089	86,608	88,914	2,306	2.7%

Full funding of capital assets will promote more effective project planning, budgeting, and management by helping to ensure that all costs and benefits are evaluated when decisions are made about providing resources. When full funding is not followed and capital assets are funded incrementally, without certainty if or when future funding will become available, it can and occasionally does result in poor risk management, weak planning, acquisition of assets not fully justified, higher acquisition costs, cancellation of major projects and loss of sunk costs, and inadequate funding to maintain and operate the assets. Full funding was endorsed by the General Accounting Office in its recent report, *Budgeting for Federal Capital* (November

1996). This practice is followed for most Department of Defense procurement and construction programs and for General Services Administration buildings, although it traditionally has not been followed for large-scale acquisition at the Department of Energy.

The use of separate construction accounts is intended to smooth out year-to-year changes in budget authority and outlays and to avoid crowding of other expenditures. In addition, inclusion in the appropriations language of a provision to prevent re-programming will contribute to the Department of Energy's ability to meet the performance requirements outlined by the Federal Acquisition and Streamlining Act of 1994 (FASA), Title V.

Uranium Enrichment Decontamination & Decommissioning Fund

Program Overview

The Uranium Enrichment D&D Fund, established by the Energy Policy Act of 1992, supports decontamination and decommissioning, remedial actions, waste management, K-25 landlord requirements and surveillance and maintenance activities associated with pre-existing conditions at the Department's gaseous diffusion plants. The Energy Policy Act authorizes annual deposits into the Uranium Enrichment D&D Fund of up to $480.0 million adjusted for inflation. Domestic utilities are to be assessed up to $150.0 million per year (adjusted for inflation) for 15 years based on their purchase of uranium enrichment services from the Federal Government. The remainder of the annual deposit is authorized to come from annual appropriations.

The Energy Policy Act also requires the DOE to develop and administer a reimbursement program for active uranium and thorium processing sites which sold to the United States Government. This program assists site owners by compensating them on a per-ton basis for the restoration costs of tailings resulting from the sale of materials to the Federal Government.

Budget Overview

The FY 1998 budget request of $248.8 million from the Uranium Enrichment D&D Fund is approximately 3 percent of the total FY 1998 Budget Request of $7,246.6 million for the Environmental Management programs.

	FY 1996 Comparable Appropriation	FY 1997 Comparable Appropriation	FY 1998 Request	FY 1997 vs. FY 1998	
Uranium Enrichment Decontamination and Decommissioning Fund	278,807	200,200	248,788	48,588	24.3%

The total Environmental Management FY 1998 budget request will be offset by a Government contribution of $388.0 million from within the Defense Environmental Restoration program, which will be deposited into the Uranium Enrichment D&D Fund. In addition, an estimated $167.0 million from assessments to domestic utilities will be deposited into the Fund. Of the $248.8 million requested for appropriation from the Uranium Enrichment D&D Fund, $208.3 million will be used to fund current work scope at the gaseous diffusion plants, while $40.5 million will be used for uranium and thorium reimbursements. The balance of the deposits within the Fund will remain in the Fund for future cleanup at the gaseous diffusion plants.

FY 1998 Budget Request

The Oak Ridge Operations Office will continue to manage, track, and assist in the implementation of the Environmental Restoration program among the three gaseous diffusion sites for $208.3 million in FY 1998. The program managed at Headquarters provides for partial payment of approved uranium and thorium reimbursement claims, $40.5 million. The FY 1998 budget request reflects a $48.6 million or 24 percent increase over the FY 1997 appropriated amount.

FY 1998 Performance Goals and Measures

The goal of the Environmental Restoration program funded by the Uranium Enrichment D&D Fund is to protect human health and the environment from risks posed by inactive and surplus DOE facilities and contaminated areas.

FY 1998 success will be measured by:

- At the K-25 Site, 8 release sites and 36 facilities are forecast for completion (K-25 is funded by the Uranium Enrichment D&D and Defense appropriations).
- At Paducah Gaseous Diffusion Plant, remediation at 14 release sites is forecast for completion (funded only by Uranium Enrichment D&D appropriation).

Highlights of Program Changes ($ in millions)

Oak Ridge Operations Office	**+$42.1**
❖ Initiation of early remedial actions and large scale decommissioning and recycling projects at the K-25 Site (FY 1997 $53.7; FY 1998 $84.9).	+31.2
❖ Funding necessary to complete construction of two major remedial actions at Paducah (FY 1997 $$40.6; FY 1998 $46.7).	+6.1
❖ Increase in waste treatment, storage and disposal costs related to increased decommissioning activity at Portsmouth (FY 1997 $47.0; FY 1998 $48.0).	+1.0
❖ Additional funding necessary to support off-site disposal of RCRA wastes, which was deferred from FY 1997 (FY 1997 $24.9; FY 1998 $28.7).	+3.8
Headquarters	**+$6.5**
❖ Increase is associated with a larger partial payment to Uranium/Thorium licensees than that provided in FY 1997 (FY 1997 $34.0; FY 1998 $40.5).	

General Science and Research

Mission

The mission of the Office of Energy Research programs included in the General Science and Research appropriation involve the High Energy and Nuclear Physics programs, which conduct fundamental research in energy, matter, and the basic forces of nature. Research is conducted primarily at DOE National Laboratories by both laboratory and university researchers, and the mission includes operation, maintenance and construction of new scientific facilities.

Program Overview

The General Science and Research appropriation funds the High Energy and Nuclear Physics programs. These programs, which are described below, provide insight into the nature of energy and matter, and support large, world class scientific facilities for physics research. High Energy and Nuclear Physics research is performed primarily at DOE National Laboratories using large particle accelerators and detectors. The research is conducted by over 3,000 researchers and over 1,000 graduate students from more than 100 universities and the National Laboratories. The Department of Energy funds approximately 90 percent of all Federal research in High Energy and Nuclear Physics.

High Energy Physics seeks an understanding of the nature of matter and energy at the most fundamental level, and the basic forces which govern all processes in nature. The research program is dependent upon the DOE state-of-the-art particle accelerators, fixed target and colliding beam facilities, and particle detectors. The major facilities are the Alternating Gradient Synchrotron at Brookhaven National Laboratory, the Tevatron at Fermilab (with both fixed and colliding beam facilities), and the Stanford Linear Accelerator Center (SLAC). Two large construction projects are nearing completion, the B-Factory at SLAC and the Fermilab Main Injector, and the program is negotiating with CERN about U.S. contributions to the Large Hadron Collider (LHC) accelerator and detectors. The program also supports the technology base required to develop the advanced concepts and technologies for new high energy physics facilities.

The Nuclear Physics program conducts research activities to understand the structure of atomic nuclei and the fundamental forces required to hold nuclei together. The experimental research program supports particle accelerators and several other research facilities located at National Laboratories and universities. A Nuclear Theory program complements experimental activities. The program supports the operation and maintenance of facilities and the construction of new facilities. Currently under construction is the Relativistic Heavy Ion Collider (RHIC) at Brookhaven National Laboratory, a colliding beam accelerator which will study nuclear matter as it undergoes a phase transition to a plasma of gluons and quarks.

Budget Overview

The FY 1998 budget request for the Office of Energy Research is $2,525.0 million. Of this, $890.9 million is for the General Science and Research appropriation, and $126.9 million is for the Science Asset Acquisition appropriation. The remaining $1,522.2 million is split between the Energy Supply Research and Development appropriation ($1,471.0 million) and the Energy Asset Acquisition appropriation ($51.3 million). Superconducting Super Collider

(SSC) prior year funds of $15.0 million are used to offset the Officeof Energy Research request in the Energy Supply Research and Development account. In High Energy Physics, the FY 1998 budget request maintains research activities at near the FY 1997 level, commissions the Fermilab Main Injector and the SLAC B-Factory, and enhances funding for U.S. participation in the Large Hadron Collider. In Nuclear Physics, emphasis continues to be placed on increased use of existing facilities and completing the Relativistic Heavy Ion Collider (RHIC) project. The FY 1998 request includes $126.9 million to complete RHIC and several other line-item construction projects.

	FY 1996 Comparable Appropriation	FY 1997 Comparable Appropriation	FY 1998 Request	FY 1997 vs. FY 1998	
General Science And Research					
High energy physics	552,403	570,075	624,185	54,110	9.5%
Nuclear physics	234,946	250,925	256,525	5,600	2.2%
General science program direction	10,650	10,000	10,200	200	2.0%
Subtotal, General science	797,999	831,000	890,910	59,910	7.2%
Transfer of SSC balances to ESR&D	——	——	-15,000	-15,000	——
Total, General Science And Research	797,999	831,000	875,910	44,910	5.4%
Science Assets Acquisition — Incremental Funding					
High energy physics	*104,000*	*100,000*	*50,850*	*-49,150*	*-49.2%*
Nuclear physics	*65,000*	*65,000*	*59,400*	*-5,600*	*-8.6%*
Total, Incremental Funding	*169,000*	*165,000*	*110,250*	*-54,750*	*-33.2%*
Total, General Science plus Incremental Funding	*966,999*	*996,000*	*986,160*	*-9,840*	*-1.0%*
Science Assets Acquisition — Transition to Full Construction Funding					
Nuclear physics	——	——	*16,620*	*16,620*	——
Total, General Science plus Construction	*966,999*	*996,000*	*1,002,780*	*6,780*	*0.7%*

In addition, an advance appropriation of $394.0 million is requested in FY 1998 to fund DOE's participation in the international Large Hadron Collider (LHC) collaboration with CERN through FY 2004. An advance appropriation will ensure that the U.S. will be a stable and effective partner in this international effort. DOE will design and fabricate particular subsystems of the accelerator and two large detectors. The total DOE contribution will be $450.0 million from FY 1996 through FY 2004, with much of this funding going to U.S. laboratories, universities and industry. Funding prior to FY 1998 was provided for preliminary R&D, design and engineering work as follows: FY 1996 $6.0 million and FY 1997 $15.0 million. In FY 1998, $35.0 million is requested to begin fabrication of subsystems and components for the Large Hadron Collider. The $394.0 million will be made available as follows: FY 1999 $65.0 million, FY 2000 $70.0 million, FY 2001 $70.0 million, FY 2002 $70.0 million, FY 2003 $65.0 million, and FY 2004 $54.0 million.

FY 1998 Budget Request

The FY 1998 budget request for General Science is $890.9 million, and an additional $126.9 million is requested for the Science Asset Acquisition Appropriation. The U.S. will finalize negotiations of its involvement in the CERN Large Hadron Collider (LHC) project. An advance appropriation of $394.0 million is requested to fund DOE participation in the project through FY 2004. Funding for the LHC increases from $15.0 million in FY 1997 to $35.0 million in FY 1998. Operations and research at the Tevatron at Fermilab will be halted to allow for the commissioning of the Fermilab Main Injector. Operation and research at the Stanford Linear Collider at SLAC will be decreased significantly to allow for the long shutdown needed to complete the B-factory project. Construction stays on schedule for the Fermi Main Injector (TEC $229.6 million, FY 1997-$52.0 million, and final funding in

FY 1998 $31.0 million) and the SLAC Master Substation Upgrade (TEC $12.4 million, FY 1997-$3.0 million, FY 1998-$9.4 million, complete FY 1998). Two construction projects are initiated in FY 1998: the Neutrinos at the Main Injector (NuMI) (TEC $5.5 million, FY 1998-$5.5 million) for design activities only and the C-Zero Area Experimental Hall at Fermilab (TEC $5.0 million, FY 1998-$5.0 million).

Enhanced FY 1998 funding for Nuclear Physics will provide increased funding for Relativistic Heavy Ion Collider pre-operations at Brookhaven (+$8.0 million). The RHIC project at Brookhaven is still under construction and scheduled for completion in FY 1999. The Thomas Jefferson National Accelerator Laboratory (TJNAF) will be able to deliver continuous beam to all three experimental halls by FY 1998. Fabrication of a new detector at the Bates Laboratory at MIT begins in FY 1998. Operations and research at the Radioactive Ion Beams (RIB) facility at ORNL will continue at the FY 1997 level with additional funding provided for capital equipment to expand beam variety. Construction funding for RHIC (included in the Science Asset Acquisition request) continues on schedule (TEC $486.9 million, FY 1997-$65.0 million, and FY 1998-$76.0 million to complete the project).

General Science Program Direction requests $10.2 million for staffing and other expenses related to High Energy and Nuclear Physics programs.

FY 1998 Performance Goals and Measures

The Office of Energy Research (OER) is working to formalize the application of performance measures to its research programs during FY 1997. Some preliminary measures are included in the detailed budget document. The resultant performance goals and measures will be implemented in FY 1998. It is anticipated that the process will involve the elements described below.

The OER will use performance measures to evaluate the basic activities that characterize this research. These activities will be measured in a number of ways, which separate naturally into four categories: 1) peer review; 2) metrics (i.e., things that can be counted); 3) customer evaluation and stakeholder input, and; 4) qualitative assessments, such as historical retrospectives and annual program accomplishments.

Highlights of Program Changes

High Energy Physics *(FY 1997: $670.1, FY 1998: $675.0)* **+$4.9**

- Large Hadron Collider increases for research, design, fabrication and equipment (FY 1997 $15.0; FY 1998-$35.0) +20.0
- Increases CDF and D-Zero detectors at Fermilab (FY 1997 $14.4; FY 1998-$35). +20.6
- Construction: Continue funding for Fermilab Main Injector (FY 1997 $52.0 million; FY 1998 $31.0 million) and SLAC Master Substation Upgrade (FY 1997 $3.0; FY 1998 $9.4). Initiate design activities for the Neutrinos at the Main Injector (NuMI) project at Fermilab (FY 1998 $5.5) and initiate construction on the C-Zero Area Experimental Hall at Fermilab (FY 1998 $5). FY 1997 is the last year of construction funding for the B-Factory (FY 1997 $45.0; FY 1998 $0.0) -49.2
- Transfer of the responsibilities for newly generated waste from the Environmental Restoration and Waste Management program to High Energy Physics for responsibilities at Fermilab and SLAC. +5.0
- All other programmatic changes +8.6

Nuclear Physics *(FY 1997: $315.9, FY 1998: $332.5)* **+$16.6**

- Heavy Ion Nuclear Physics increases funding for RHIC pre-operations, inventory, and capital equipment. +8.0
- Construction funding for the Relativistic Heavy Ion Collider (RHIC) increases to provide advanced funding to complete the project in FY 1999 (TEC $486.9 million, FY 1997 $65.0; FY 1998 $76.0 million). +11.0
- Other programmatic changes. -2.4

Program Direction *(FY 1997 $10.0; FY 1998 $10.2)* **+$0.2**

- Increased salary costs.

Science Asset Acquisition

As part of an Administration-wide focus on improving the planning, budgeting and acquisition of capital assets, two new changes were introduced in the FY 1998 budget: three new accounts were created for line-item construction projects and full funding through regular appropriations is requested for programmatically-viable segments of all new and on-going line-item capital projects. The Science Assets Acquisition appropriation was created for construction projects previously funded within the General Science and Research Activities appropriation. A total of $126.9 million is requested for FY 1998 for two new and three on-going projects.

	FY 1996 Comparable Appropriation	FY 1997 Comparable Appropriation	FY 1998 Request	FY 1997 vs. FY 1998	
Science Assets Acquisition					
High energy physics	104,000	100,000	50,850	-49,150	-49.2%
Nuclear physics	65,000	65,000	76,020	11,020	17.0%
Total, Science Asset Acquisition	169,000	165,000	126,870	-38,130	-23.1%

Full funding of capital assets will promote more effective project planning, budgeting, and management by helping to ensure that all costs and benefits are evaluated when decisions are made about providing resources. When full funding is not followed and capital assets are funded incrementally, without certainty if or when future funding will become available, it can and occasionally does result in poor risk management, weak planning, acquisition of assets not fully justified, higher acquisition costs, cancellation of major projects and loss of sunk costs, and inadequate funding to maintain and operate the assets. Full funding was endorsed by the General Accounting Office in its recent report, *Budgeting for Federal Capital* (November 1996). This practice is followed for most Department of Defense procurement and construction programs and for General Services Administration buildings, although it traditionally has not been followed for large-scale acquisition at the Department of Energy.

The use of separate construction accounts is intended to smooth out year-to-year changes in budget authority and outlays and to avoid crowding of other expenditures. In addition, inclusion in the appropriations language of a provision to prevent re-programming will contribute to the Department of Energy's ability to meet the performance requirements outlined by the Federal Acquisition and Streamlining Act of 1994 (FASA), Title V.

Weapons Activities

Mission

The mission of Defense Programs is to maintain the safety, security, and reliability of the Nation's enduring nuclear weapons stockpile within the constraints of a comprehensive test ban, utilizing a science-based approach to stockpile stewardship and management in a smaller, more efficient weapons complex infrastructure. The future weapons complex will rely on scientific understanding and expert judgement, rather than on underground nuclear testing and the development of new weapons, to predict, identify and correct problems affecting the safety and reliability of the stockpile. Enhanced experimental capabilities and new tools in computation, surveillance, and advanced manufacturing will become necessary to recertify weapon safety, performance, and reliability without underground nuclear testing. Weapons will be maintained, modified, or retired and dismantled as needed to meet arms control objectives or remediate potential safety and reliability issues. As new tools are developed and validated, they will be incorporated into a smaller, more flexible, agile, and less costly weapons complex infrastructure for the future.

Program Overview

The Defense Programs Stockpile Stewardship and Management Program is a single, highly integrated technical program for maintaining the safety and reliability of the U.S. nuclear stockpile in an era without underground nuclear testing and without new nuclear weapons development and production. Traditionally, the activities of the three weapons laboratories and the Nevada Test Site have been regarded separately from those of the weapons production plants. However, although they remain separate budget decision units within Weapons Activities, all stockpile stewardship and management activities have achieved a new, closer linkage to each other as evidenced in the annual Stockpile Stewardship and Management plan and the recently completed Programmatic Environmental Impact Statement (PEIS).

There are three primary goals of the Stockpile Stewardship and Management Program: 1) provide high confidence in the safety, security, reliability and performance of the enduring U.S. nuclear weapons stockpile to ensure the continuing effectiveness of the U.S. nuclear deterrent while simultaneously supporting U.S. arms control and nonproliferation policy and without underground nuclear testing; 2) provide an appropriately sized, affordable, environmentally sound, and effective production complex to provide component and weapon replacements when needed, including limited lifetime components and tritium; and 3) provide the ability to reconstitute U.S. nuclear testing and weapon production capability, consistent with Presidential Directives, the Nuclear Posture Review, and the START II Treaty, should National security so demand in the future. The Defense Programs budget request is comprised of three decision units: Stockpile Stewardship, Stockpile Management, and Program Direction.

The Stockpile Stewardship program will address forward looking issues related to maintaining confidence in the safety and reliability of the nuclear weapons stockpile without underground nuclear testing through a technically challenging and comprehensive science-based program utilizing upgraded and new experimental, computational, and simulation capabilities. The Stewardship budget request supports major initiatives in high energy density research with

lasers and accelerated research and development in advanced computations to acquire and use data to improve predictive capabilities which will be the foundation of the science-based stewardship approach.

The Stockpile Management program supports the enduring stockpile as directed in the Nuclear Weapons Stockpile Plan; assures the availability of adequate supplies of tritium to meet the requirements of the enduring stockpile; provides safe and secure storage of nuclear materials and components to prevent proliferation of capabilities, technologies, and systems; provides the ability to respond to potential and real weapons incidents/accidents, and to respond to continuing and evolving nuclear terrorist threats; and provides a flexible infrastructure capable of supporting changing stockpile sizes.

Program Direction provides funds for all Federal oversight funding including personnel-related expenses, capital equipment, and contractual services for Defense Program funded employees at Headquarters and the Albuquerque, Nevada, Oak Ridge (Y-12 Site Office), Oakland (Livermore Site Office), and Savannah River Operations Office (Tritium operations).

Budget Overview

The Defense Programs request for FY 1998 is $5.1 billion, of which $3.6 billion is for the Weapons Activities operation and maintenance account; and $1.5 billion is for the Defense Asset Acquisition account, including $1,034.2 million for the transition to full construction funding. Overall, the Defense Programs request represents an increase of $1.2 billion or 29.8 percent above the FY 1997 appropriation. The increase is entirely for construction of new facilities and is primarily due to the inclusion of full funding in the FY 1998 request. Without the required budget authority to fully fund construction projects, the FY 1998 funding level would be $4.0 billion, a 3.4 percent increase over the FY 1997 appropriation.

	FY 1996 Comparable Appropriation	FY 1997 Comparable Appropriation	FY 1998 Request	FY 1997 vs. FY 1998	
Weapons Activities					
Stockpile stewardship	1,375,407	1,436,530	1,444,290	7,760	0.5%
Stockpile management	1,727,646	1,834,470	1,828,465	-6,005	-0.3%
Program direction	324,873	325,600	303,500	-22,100	-6.8%
Subtotal, Weapons activities	3,427,926	3,596,600	3,576,255	-20,345	-0.6%
Use of prior year balances	-210,764	——	——	——	——
Total, Weapons Activities	3,217,162	3,596,600	3,576,255	-20,345	-0.6%
Defense Assets Acquisition — Incremental Funding					
Stockpile stewardship	*119,905*	*220,237*	*296,610*	*76,373*	*34.7%*
Stockpile management	*113,625*	*94,361*	*171,585*	*77,224*	*81.8%*
Total, Incremental Funding	*233,530*	*314,598*	*468,195*	*153,597*	*48.8%*
Total, Weapons Activities plus Incremental Construction	*3,450,692*	*3,911,198*	*4,044,450*	*133,252*	*3.4%*
Defense Assets Acquisition — Transition to Full Construction Funding					
Stockpile stewardship	——	——	*752,816*	*752,816*	——
Stockpile management	——	——	*281,384*	*281,384*	——
Total, Transition to Full Construction Funding	——	——	*1,034,200*	*1,034,200*	——
Total, Weapons Activities plus Construction	*3,450,692*	*3,911,198*	*5,078,650*	*1,167,452*	*29.8%*

The FY 1998 request supports full implementation of the Stockpile Stewardship and Management Plan. In Stockpile Stewardship, research and development efforts will continue on the near and long term requirements of the nuclear weapons stockpile. In particular, efforts will be placed on providing new methods for assessing, manufacturing, and certifying weapons components and systems without the use of underground nuclear testing. The

Stockpile Management program will continue ongoing activities required to manage the stockpile, and will include implementation of the current Stockpile Plan, related dismantlement schedules, and Limited Life Component Exchange (LLCE) schedules.

FY 1998 Budget Request

The Stockpile Stewardship program is requesting $1,444.3 million in the Weapons Activities operation and maintenance account in FY 1998, an increase of $7.8 million or 0.5 percent above the FY 1997 comparable level. The Stockpile Stewardship portion of the Defense Asset Acquisition account is $1,049.4 million, an increase of $829.2 million above the FY 1997 comparable level, due primarily to the inclusion of construction full funding in the FY 1998 request. The request includes continued funding for the base program and infrastructure at the weapons laboratories and the Nevada Test Site. In addition, funding is being continued for several initiatives undertaken to support the science-based Stockpile Stewardship program. The Accelerated Strategic Computing Initiative (ASCI) will continue to accelerate the development of highly complex nuclear weapons simulation codes and work with industrial partners on advanced computer platforms, and computing environments and infrastructure ($204.8 million). Funding for the National Ignition Facility (NIF), another key element of the science-based Stockpile Stewardship program, is continued (operation and maintenance $31.3 million; full construction funding $876.4 million). The Technology Transfer request ($60.0 million) will continue to focus resources on the highest priority partnerships supporting the National Security mission in addition to the initiatives of the American Textiles Partnership (AMTEX); the Advanced Computational Technology Initiative (ACTI); and the Partnership for a New Generation of Vehicles (PNGV).

The Stockpile Management program is requesting $1,828.5 million in the Weapons Activities operation and maintenance account in FY 1998, a decrease of $6.0 million or 0.3 percent below the comparable FY 1997 level. The Stockpile Management portion of the Defense Asset Acquisition account is $453.0 million, an increase of $358.6 million above the FY 1997 comparable level, largely due to the inclusion of design funding for the Tritium Source line items and construction full funding for other projects in the FY 1998 request. The Core Stockpile Management Program will maintain, evaluate, modify, improve, and dismantle weapons in accordance with the nuclear weapons stockpile plan. The Enhanced Surveillance initiative will continue to develop tools, techniques, and models for measuring, qualifying, calculating, and predicting the effects of aging on weapons materials and components and understanding these effects as they impact weapons safety and reliability ($60.0 million). The Advanced Manufacturing, Design and Production Technologies program will focus on re-engineering and modernizing the weapons complex into a modern, agile, and fully integrated operation capable of responding to a wide range of production requirements ($103.2 million). The budget request continues to pursue a dual-track strategy for a new, assured source of tritium. For FY 1998, the budget request includes $184.5 million for operations and maintenance for tritium programs; $168.6 million for preliminary design (Title I) for Accelerator Production of Tritium (APT); and $39.5 million for design of a Tritium Extraction Facility. The operations and maintenance funds are primarily for technology development and demonstration of APT components.

For Weapons Activities Program Direction, the budget requests $303.5 million in FY 1998, a decrease of $22.1 million or 6.8 percent below the FY 1997 comparable level. The decrease is attributable to a one-time payment in FY 1997 to eliminate the need for further assistance to the County of Los Alamos, New Mexico, under the Atomic Energy Community Act.

FY 1998 Performance Goals and Measures

Maintaining the Enduring Stockpile

Ensure the safety and reliability of our nuclear weapons.

FY 1998 success will be measured by:

- Securing certification that the safety and reliability of the stockpile is being maintained.
- Meeting milestones in the Stockpile Stewardship and Management Plan.
- Developing enhanced surveillance techniques.

Developing a Replacement Source of Tritium

Develop a replacement source of tritium for the enduring stockpile.

FY 1998 success will be measured by:

- Developing information needed to select a primary source of tritium.

Reducing the Weapons Stockpile

Safely reduce the U.S. nuclear weapons stockpile in order to reduce the nuclear danger and enhance international accord.

FY 1998 success will be measured by:

- Dismantling approximately 1,300 weapons in FY 1998 without adversely impacting the environment, public safety, and health.

Replacing Nuclear Testing with Science

Continue the development of science-based projects to ensure confidence in the enduring stockpile without underground nuclear testing.

FY 1998 success will be measured by:

- Proceeding with the Accelerated Strategic Computing Initiative (ASCI) and the initial set up of the three trillion operations per second Option Blue system, demonstrating its operating system and the ability to transfer complex computer codes from other systems into this ultra high performance environment before completing the installation of the full system in the first quarter of FY 1999. Continue the strategic alliances/partnership process with industry and universities and utilize the initial delivery of the system to assist in code development and optimizing the operational environment.
- Starting physical construction of the National Ignition Facility (NIF).
- Continuing Dual Axis Radiographic Hydrodynamic Test Facility (DARHT) construction by completing the first arm and completing design of the second arm.
- Conducting four subcritical experiments at the Nevada Test Site.

Downsizing the Nuclear Weapons Complex

Provide an appropriate sized, affordable, and environmentally sound production complex.

FY 1998 success will be measured by:

- Initiating the Stockpile Management Restructuring Initiative (SMRI) projects to downsize and modernize production capabilities needed for the future.
- Infuse new product and process technologies into the complex through the Advanced Manufacturing, Design and Production Technology (ADaPT) program.

Highlights of Program Changes ($ in millions)

Stockpile Stewardship *(FY 1997: $1,436.5, FY 1998: $1,444.3)* +$7.8

The Stockpile Stewardship operation and maintenance account increases by a total of $7.8 million from FY 1997 to FY 1998. This is a result of net increases and decreases throughout the Core Stockpile Stewardship and Inertial Confinement Fusion subprograms as described below.

Core Stockpile Stewardship *(FY 1997: $1,132.6, FY 1998: $1,158.3)* +$25.7

- Accelerated Strategic Computing Initiative (ASCI) will continue acceleration of the ASCI program to enhance code and software development to take advantage of the ongoing hardware development programs. FY 1998 efforts will include maintaining the momentum recently achieved in operation of the world's fastest supercomputer. In December 1996, the ASCI program achieved 1 trillion floating operations per second. This processing record is nearly three times faster than the previous supercomputer record holder. (FY 1997: $151.6, FY 1998: $204.8) +53.2
- Various increases and decreases spread throughout Core Stockpile Stewardship. -27.5

Inertial Confinement Fusion (ICF) *(FY 1997: $234.6, FY 1998: $217.0)* -$17.6

The operation and maintenance funds associated with the National Ignition Facility (NIF), (FY 1997: $59.2, FY 1998: $31.3) decrease reflecting the completion of optics vendor facilitization activities. This decrease is partially offset by an increase in the remaining ICF operation and maintenance funds needed to insure that required ICF technology development activities are on schedule to support the NIF.

Technology Transfer/Education *(FY 1997: $69.4, FY 1998: $69.0)* -$0.4

The Technology Transfer and Education program maintains the FY 1997 level of effort.

Stockpile Management *(FY 1997: $1,834.5, FY 1998: $1,828.5)* -$6.0

The Stockpile Management operation and maintenance account decreases by a total of $6.0 million from FY 1997 to FY 1998. This is a result of net increases and decreases throughout the base of the Stockpile Management subprograms as described below.

Core Stockpile Management *(FY 1997: $1,340.8, FY 1998: $1,294.5)* -$46.3

- Reductions in level of effort for maturing programs. -36.4
- Nonrecurring payment of pension plans/sales tax liabilities at Mound and Pinellas in FY 1997. -39.0

- Transfer of programmatic and funding responsibility from Stockpile Stewardship and the Office of Nuclear Energy to support operations of nuclear materials facilities at the Los Alamos National Laboratory. +21.4
- Funding transferred from EM for a one-year pilot project for the transition of responsibility and funding of new generated waste back to the generator at the Kansas City Plant and Savannah River Site. +7.7

Enhanced Surveillance *(FY 1997: $55.0, FY 1998: $60.0)* **+$5.0**

Continued support of the Enhanced Surveillance Program Plan.

Advanced Manufacturing, Design and Production Technologies *(FY 1997: $100.8, FY 1998: $103.2)* **+$2.4**

Continued support of the Advanced Manufacturing, Design and Production Technologies initiative.

Tritium Source *(FY 1997: $150.0, FY 1998: $184.5)* **+$34.5**

Tritium Source provides increased funding to obtain improved information and a better understanding of the costs for both tracks prior to DOE making its technology selection. The Accelerator Production of Tritium (APT) track will complete initial key demonstrations of the low-energy part of the accelerator, complete target/blanket low-power tests, test and analyze the irradiated target/blanket specimens, and begin preliminary plant design. The Commercial Light Water Reactor (CLWR) track will make conditional selections of reactor(s) and award option contracts preparatory to the purchase of a reactor and/or irradiation services.

Program Direction *(FY 1997: $325.6, FY 1998: $303.5)* **-$22.1**

The Program Direction FY 1998 request does not include the one-time payment of $22.6 million appropriated in FY 1997 to eliminate the need for further assistance to the County of Los Alamos.

Defense Assets Acquisition **+$1,187.8**

Stockpile Stewardship *(FY 1997: $220.2, FY 1998: $1,049.4, which includes $752.8 for transition to full construction funding)* **+$829.2**

The FY 1998 request for Assets Acquisition (i.e., line-item construction projects) for Stockpile Stewardship is $1,049.4 million. The majority ($876.4) is to build the National Ignition Facility (NIF); $46.3 million is included to complete Phase I and engineering design and long lead procurement for Phase II of the Dual Axis Radiographic Hydrodynamic Test Facility (DARHT); and $126.7 million is provided to complete four projects started in FY 1996.

Stockpile Management *(FY 1997: $94.4, FY 1998: $453.0, which includes $281.4 for transition to full construction funding)* **+$358.6**

The FY 1998 request for Assets Acquisition (i.e., line-item construction projects) for Stockpile Management is $453.0 million. The request includes $168.6 million for preliminary (Title I) design for Accelerator Production of Tritium (APT); $39.5 million for design of a Tritium Extraction Facility; $21.7 million for design activities at Y-12 and Savannah River under the Stockpile Management Restructuring Initiative (SMRI); $106.4 million to complete

Phase II of the upgrade to the Chemistry and Metallurgy Research (CMR) Building at Los Alamos; and $116.8 million to complete other prior year projects.

Defense Environmental Restoration and Waste Management

Budget Overview

The FY 1998 budget request for Defense Environmental Restoration and Waste Management appropriation of $5,052.4 million is $21.8 million less, a less than 1 percent decrease, than the comparable amount for FY 1997. However, in FY 1998, $642.7 million associated with the construction activities of the EM program will be requested under the National Defense Asset Acquisition appropriation. Of the $5,052.4 million, approximately 35 percent is for Environmental Restoration, 29 percent is for Waste Management, 5 percent is for Technology Development, and 22 percent is for Nuclear Material and Facility Stabilization. In addition, 8 percent is for Program Direction, less than 1 percent is for Policy and Management, 1 percent is for the Environmental Management Science Program, and less than 1 percent supports Closure Projects. These programmatic percentages are premised on EM complying with the provisions of Executive Order 12088, addressing all urgent risks, and meeting Defense Nuclear Facility Safety Board recommendations to the extent possible.

	FY 1996 Comparable Appropriation	FY 1997 Comparable Appropriation	FY 1998 Request	FY 1997 vs. FY 1998	
Defense Environmental Restoration and Waste Management					
Environmental restoration	1,804,052	1,762,194	1,744,573	-17,621	-1.0%
Waste management	1,801,714	1,490,320	1,455,576	-34,744	-2.3%
Technology development	291,491	295,215	257,881	-37,334	-12.6%
Program direction	473,751	411,511	388,251	-23,260	-5.7%
Nuclear material and facility stabilization	1,170,252	1,173,718	1,118,114	-55,604	-4.7%
Policy and management	25,541	23,155	23,104	-51	-0.2%
Environmental science program	63,875	62,124	50,000	-12,124	-19.5%
Closure projects	——	15,000	15,000	——	——
Subtotal, Defense environmental management	5,630,676	5,233,237	5,052,499	-180,738	-3.5%
Use of prior year balances & other adjustments	-423,785	-158,932	——	158,932	100.0%
Total, Defense Env. Restoration & Waste Mgmt.	5,206,891	5,074,305	5,052,499	-21,806	-0.4%
Defense Assets Acquisition — Incremental Funding					
Waste management	*140,056*	*91,127*	*80,768*	*-10,359*	*-11.4%*
Nuclear materials and facilities stabilization	*106,721*	*123,872*	*84,907*	*-38,965*	*-31.5%*
Total, Incremental Funding	*246,777*	*214,999*	*165,675*	*-49,324*	*-22.9%*
Total, Def. Env. Mgmt. plus Incremental Construction	*5,453,668*	*5,289,304*	*5,218,174*	*-71,130*	*-1.3%*
Defense Assets Acquisition — Transition to Full Construction Funding					
Waste management	——	——	*377,550*	*377,550*	——
Nuclear materials and facilities stabilization	——	——	*99,439*	*99,439*	——
Total, Transition to Full Construction Funding	——	——	*476,989*	*476,989*	——
Total, Def. Environmental Mgmt. plus Construction	*5,453,668*	*5,289,304*	*5,695,163*	*405,859*	*7.7%*
Uranium Enrichment D&D Fund Discretionary Payments					
Transfer payment from Defense ER&WM	-350,000	-376,648	-388,000	-11,352	-3.0%

The Defense Environmental Restoration and Waste Management appropriation no longer includes funding for line-item capital construction projects. The FY 1998 request of $642.7 million for the construction funds associated with the Defense Environmental Management programs is contained within the National Defense Asset Acquisition appropriation. This amount includes $165.7 million for the FY 1998 increment of the various line items and an additional $477.0 million for the full funding associated with these projects. The FY 1998 increment is $49.3 million lower than the FY 1997 incremental funding level (which was appropriated in the Defense Environmental Restoration and Waste Management appropriation).

FY 1998 Budget Request

Environmental Restoration

Of the $5,052.4 million requested in FY 1998 for the Defense Environmental Restoration and Waste Management appropriation, $1,744.6 million is for Environmental Restoration. This amount for Environmental Restoration is $17.6 million, 1 percent, below the comparable FY 1997 amount. The Environmental Restoration program continues efforts in FY 1998 to identify the sources, nature and extent of contamination to allow a more accurate determination of relative risk, scope and cost of projects. It also increases the cost-effectiveness of characterization efforts by establishing objectives beforehand. However, greater emphasis is placed on doing fewer studies and accomplishing more actual cleanup in FY 1998.

Waste Management

The Waste Management program request of $1,455.6 million is $34.7 million, 2 percent, less than the FY 1997 comparable amount. The FY 1998 request supports activities that focus on compliance and risk reduction, as well as significant progress toward mission completion. Priority activities supported by this request include: continuing high-level waste treatment at the Defense Waste Processing Facility to reduce risk associated with the storage of liquid high-level waste; continuing calcine operations at Idaho for high-level waste treatment and storage; initiating transuranic (TRU) waste disposal at the Waste Isolation Pilot Plant (WIPP) following the completion of all statutory and regulatory requirements; continuing low-level waste disposal at six sites; and implementing site treatment plans as negotiated through the Federal Facilities Compliance Act process. The program will also perform two re-engineering pilots, at Kansas City and Savannah River, turning over responsibility and funding to the generators for newly generated waste. It is believed this will reduce the cost of waste management at these sites.

Technology Development

The Technology Development FY 1998 request of $257.9 million is $37.3 million, 13 percent, less than the comparable amount for FY 1997. It provides $91.1 million for the four focus areas which address characterization, treatment, disposal, containment, remediation, decontamination and decommissioning technology systems; $50 million for the technology deployment initiative to provide rapidly developing cost-effective remediation technologies to assist in the acceleration of site cleanup in conjunction with the Ten-Year Plan goals; $62.9 million for industry, university and Small Business Innovative Research programs; $25.3 million for technology integration activities to ensure the application of needed advanced technologies, resulting in increased commercial availability and acceptance of needed

advanced technologies; and $28.6 million to continue crosscutting programs related to characterization and sensors, efficient separations, and robotics for the focus areas.

Program Direction

The FY 1998 budget request of $388.2 million, is a $23.3 million, 6 percent, reduction from FY 1997, for Program Direction supports 537 full time equivalents (FTEs) at headquarters (employees based in the Washington, D.C. area), 2,457 FTEs at the major operations offices located throughout the country, and 32 FTEs for the Technical Leadership Development Program. The funding is for salaries, benefits, travel, training, and other related expenses of the 3,026 FTEs. This request includes $9.7 million for EM's share of the Working Capital Fund. The role of the Headquarters workforce is to determine and implement policy. To this end, EM Headquarters first establishes priorities and goals for the line programs, and then develops the baselines to assist in assessing the progress of planned activities. Headquarters activities include the management, coordination, tracking, and implementation of the EM programs among the many sites throughout the DOE complex. Headquarters also serves as the champion for integration activities across all sites. The field personnel are responsible for the oversight of the Department's contractor workforce that supports EM activities for the Department of Energy.

Nuclear Material and Facility Stabilization

The $1,118.1 million request for the Nuclear Material and Facility Stabilization (NMFS) program is $55.6 million, 5 percent, less than the FY 1997 comparable amount. The funding provides for the management of the activities related to surplus weapons complex facilities to ensure the nuclear materials and spent nuclear fuel are placed in a form suitable for longer-term storage and to deactivate the facilities. These activities include surveillance and maintenance, stabilization, deactivation, landlord, environmental and regulatory analysis, transportation management, emergency and characterization management, and pollution prevention. The program also funds activities associated with the deactivation, remediation, operations and disposition of former defense facilities at the Mound and Pinellas sites.

Policy and Management

The FY 1998 budget request for Policy and Management of $23.1 million is slightly lower than the FY 1997 comparable amount. The request provides for Environmental Management's Office of Intergovernmental and Public Affairs to establish EM policy, approve plans and evaluate the effectiveness of stakeholder involvement and other public participation efforts. Also, technical and professional training courses EM-wide will be purchased and developed to resolve Defense Nuclear Facility Safety Board Recommendation 93-3 concerns related to technical competency. Finally, EM-wide information management support will be continued in FY 1998.

Environmental Science

The Environmental Science program request of $50.0 million is $12.1 million, 20 percent, below the FY 1997 comparable amount. The majority of the FY 1998 request, $42.0 million, will be issued and managed as grants, under the Basic Science Program, to the DOE National

laboratories as well as to academic and industrial organizations. These grants will be provided to fundamental research projects selected by a peer review panel. The Risk Policy Program, $8.0 million, will support Risk Initiative Grants and Cooperative Agreements awarded under a Notice of Program Interest. These agreements are with independent institutions who work together to help the Department further define and implement approaches for credible risk assessment, management, and communication.

Closure Projects

The request for Closure Projects in FY 1998 is $15.0 million, equivalent to the FY 1997 comparable amount. This program provides for the acceleration and completion of selected projects which will result in a significant long-term cost savings through mortgage and risk reduction. The projects supported by the FY 1997 appropriation, chosen through a competitive bid process, include a combination of accelerated site cleanup and urgent risk reduction initiatives. A similar process will be completed to distribute the requested funds at the beginning FY 1998.

FY 1998 Performance Goals and Measures

Environmental Restoration

The goal of the Environmental Restoration program is to protect human health and the environment from risks posed by inactive and surplus DOE facilities and contaminated areas.

FY 1998 success will be measured by:

- Completing cleanup or identification for no further action of over 400 release sites. This will bring the number of release sites completed to about 4,002 out of 8,826.
- Decommissioning of 50 to 70 facilities. This will bring the total number of facilities completed to about 352 out of 1,090.

Waste Management

The goal of the Waste Management program is to protect the public health and safety from the risks posed by the Department's wastes by managing the treatment, storage and disposal of wastes.

FY 1998 success will be measured by:

- Volumes of waste treated, stored and disposed, including:
  - Production of between 125 to 200 canisters at the DWPF and the processing of 6 million gallons of saltstone grout.
  - Conversion of 580 m^3 of liquid high-level waste through operation of the New Waste Calcining Facility.
  - Disposal of approximately 40,000 m^3 of low-level waste at six sites.
  - Maintenance of safe and compliant storage of over 500,000 m^3 of low-level waste.
- Resolution of all related statutory and regulatory requirements and initiation of transuranic waste disposal at the Waste Isolation Pilot Plant.

- Implementation of Site-Treatment Plans as negotiated through the Federal Facility Compliance Act process.
- Implementation of cost savings initiatives such as re-engineering the management of newly generated waste at Kansas City and Savannah River.

Nuclear Material and Facility Stabilization

The goal of the Nuclear Material and Facility Stabilization program is to reduce the risks associated with unstable excess nuclear and chemical materials at the Department's sites and to reduce the maintenance costs resulting from stabilizing materials and deactivating buildings awaiting decommissioning or final disposition.

(More details regarding measurement of these goals will become available with the finalization of the Environmental Management Ten Year Plan.)

FY 1998 success will be measured by:

- Quantity of nuclear material stabilized:
  - 253 Kg of plutonium will be precipitated from solution at Richland in FY 1998.
  - 1,678 Kg of 2,176 Kg of bulk plutonium residues will be stabilized at Richland in FY 1998.
  - Repackage 240 items of plutonium in FY 1998 at Savannah River.
- Quantity of Spent Nuclear Fuel stabilized:
  - 1.13 metric tons heavy metal of spent fuel will be removed from CPP-603 at Idaho in FY 1998.
  - 172 metric tons heavy metal of spent fuel will be stabilized at Richland in FY 1998.
- Full deactivation of one building (B Plant).

Technology Development

The goal of Technology Development is to demonstrate new environmental technologies and systems and transfer them to private industry and Federal facilities.

FY 1998 success will be measured by:

- Demonstrating 14 new environmental technologies and systems.
- Making 61 environmental technologies available for transfer and use by private industry and Federal facilities.

Highlights of Program Changes ($ in millions)

Environmental Restoration -$17.6

- Funding for Albuquerque increases from $85.8 million in FY 1997 to $126.2 million in FY 1998 due to acceleration of remediation activities at Los Alamos National Laboratory, various small sites such as Sandia National Labs in California and New Mexico, the Kansas City Plant and Pantex, and the partial "principal

responsible party" (PRP) payment of DOE's share of the Maxey Flats, Kentucky clean up (this was funded under Environmental Restoration HQ in FY 1997 and FY 1998). +40.4

- Funding for Chicago increases from $1.1 million in FY 1997 to $4.7 million in FY 1998, with the major increase being for accelerated remediation activities at Argonne National Laboratory - East. +3.6
- Headquarters funding is reduced from $390.6 million in FY 1997 to $388.8 million in FY 1998. Of this amount, the government contribution to the Uranium Enrichment D&D Fund increased from $376.6 million in FY 1997 to $388.0 million in FY 1998 (+$11.4) for inflation, as required by the Energy Policy Act of 1992. Headquarters has historically funded the PRP payment for Maxey Flats (-$8.0), however, this was transferred to Albuquerque in FY 1998. Headquarters also reduced technical support contractors (-$5.1). -1.8
- Funding for Idaho decreases from $107.4 million in FY 1997 to $84.1 million in FY 1998 due to completion of a number of assessments and remedial actions at the Radioactive Waste Management Complex, and Waste Area Groups 1 (Test Area North), 4, 5 (the SL-1 Burial Grounds) and 10. -23.3
- Funding for Oakland decreases from $24.3 million in FY 1997 to $20.4 million in FY 1998 due to the completion of assessment activities at Site 300 (LLNL) and completion of the D&D activities at the Rockwell Hot Lab at the Energy Technology Engineering Center (ETEC). -3.9
- Funding at Oak Ridge decreases from $78.6 million in FY 1997 to $64.2 million in FY 1998 as a result of the completion of remediation activities at the Lower East Fork Poplar Creek in FY 1997, and the reduction in site-wide integration and technical program support. -14.4
- Funding for Ohio is reduced from $286.3 million in FY 1997 to $245.4 million in FY 1998 as a result of program activities being proposed for transfer to and funded under the Privatization program in FY 1998, and completion of the decommissioning activities at the Columbus King Avenue site. -40.9
- Funding at Richland decreases from $134.1 million in FY 1997 to $132.3 million in FY 1998 due to a combination of offsetting events such as reductions in program management support service contractors, increased ground water management efforts near the Columbia River, completion of deactivation activities at N-Reactor, and transfer of the PUREX facility from the Nuclear Material and Facility Stabilization program. -1.8
- Funding at Rocky Flats goes from $484.1 million in FY 1997 to $518.3 million in FY 1998 due to increases in decommissioning and clean up activities, initiation of mixed waste treatment activities, the solid residue elimination project, the plutonium storage vault and operation of the plutonium processing and packaging system. Surveillance and maintenance will be reduced due to removal of special nuclear materials from several buildings, and the litigation support decreases because the Cook case is predicted to be nearing completion. +34.2
- The decrease in funding at Savannah River from $115.2 million in FY 1997 to $105.9 million in FY 1998 is the result of the transfer of responsibility of C, P, and R reactors to the Nuclear Material and Facility Stabilization program, and reduction in characterization activities and assessments associated with acid/caustic basins. -9.3

Waste Management **-$34.7**

- Albuquerque funding decreases from $97.1 million in FY 1997 to $90.7 million in FY 1998. The decrease reflects the transfer of newly-generated waste management responsibilities at the Kansas City Plant (KCP) to the Office of Defense Programs; the completion of waste water pre-treatment project at KCP; and reduced Pinellas workforce restructuring efforts. These decreases are offset, in part, by the resumption of funding for Agreement in Principle and increased TRU remediation at Los Alamos National Lab. -6.4
- Carlsbad Area Office funding decreases from $188.8 million in FY 1997 to $162.9 million in FY 1998. The decrease reflects the reduced efforts to establish full remote-handled waste handling capabilities at WIPP and reduced efforts in WIPP experimental programs, and the National TRU Program. -25.9
- Idaho funding increases from $115.0 million in FY 1997 to $137.9 million in FY 1998. This increase provides for: initiation of TRU waste shipments to WIPP; restoration of management responsibilities funded within Nuclear Materials and Facility Stabilization infrastructure accounts in FY 1997; conceptual design activities for the HLW Immobilization Plant; and increased HLW activities, including initiation of an EIS and preparation for a new evaporation campaign. +22.9
- Nevada funding decreases from $16.3 million in FY 1997 to $14.6 million in FY 1998, which reflects reductions in program management requirements and the completion of site characterization and performance assessment milestones. -1.7
- Oakland funding decreases from $23.9 million in FY 1997 to $23.0 million in FY 1998 which reflects less defense support services to the Oakland Operations Office due to greater efficiencies and reduced activities requiring monitoring. -0.9
- Oak Ridge funding decreases from $160.7 million in FY 1997 to $151.9 million in FY 1998 due to the privatization of TRU treatment activities, and efficiencies realized in disposal activities. -8.8
- Richland funding decreases from $438.9 million in FY 1997 to $422.2 million in FY 1998 due to: significant increases in support of Tank Waste Remediation privatization; increased tank sampling; waste activities related to the startup of WRAP I; decreases in Tank Farm Operations; decreases related to the conclusion of TWRS EIS, Tank Safety Issues, and tank 241-C-106 waste removal completion; and transfer of specific facility management responsibilities to other EM organizations. -16.7
- Savannah River funding increases from $442.6 million in FY 1997 to $446.4 million in FY 1998. This reflects increases in activities related to DWPF Saltstone operations, offset in part by a decrease associated with the placement of the CIF in warm standby and the completion the Replacement High-Level Waste Evaporator. +3.8

Technology Development **-$37.3**

- Funding for Treatment and Remediation Technology Systems decreases from $151.9 million in FY 1997 to $141.1 million in FY 1998. The funding for the focus areas is significantly reduced for the following reasons: maturation of the mixed

waste treatment effort and therefore a shift of focus to ancillary technologies is possible; minimal changes are required for development of technologies to support radioactive tank waste remediation; completion of technology development activities in FY 1997 associated with source term containment and remediation (-$60.0). Funding to start the Technology Deployment Initiative ($50.0) offsets the decrease to the focus areas. -10.8

- Funding for the Crosscutting programs decreases from $41.9 million in FY 1997 to $28.6 million in FY 1998. Funding for the Efficient Separations and Processing program reduces due to the completion of all international projects in FY 1997 (-$7.8). Also, the University Research Program for Robotics will be completed at the end of FY 1997 (-$4.0). -13.3

- Funding for Industry and University Programs increases from $57.2 million in FY 1997 to $62.9 million request in FY 1998. Activities related to worker exposure to toxic materials will be increased (+$5.4). +5.7

- Funding for Technology Systems Applications decreases by $18.9 million to its FY 1998 request of $25.3 million. Significantly reduced Public and Tribal participation will focus only on technology-specific issues for rapid deployment. (-$18.5). -18.9

Program Direction -$23.3

- Salaries and Benefits are reduced from $261.2 million in FY 1997 to $247.3 million for FY 1998. EM has a net decrease of 171 FTEs across the EM complex. These reductions were offset by the anticipated Federal pay raise and associated benefits for the 3,026 FTEs (-$5.8). A decrease of $8.1 million results from the elimination of planned costs of buyouts necessary to meet the Department's Strategic Alignment Initiative end of year on board ceilings. -13.9

- Travel funding has been increased at the Albuquerque Operations Office due to the planned closure of the Pinellas Plant in FY 1998. The funds will be used for permanent change of station costs to attract and retain qualified personnel (+$1.4). In an effort to reduce travel in response to Secretarial direction, travel has been reduced by $0.3 million across the field offices and at Headquarters in FY 1998. +1.1

- Support service contracts have been reduced at the field (-$1.0) and at Headquarters (-$5.7) consistent with both Congressional and Departmental initiatives. -6.7

- Funding for other related expenses increase at the Carlsbad Area Office due to a planned move to GSA space in FY 1998. Currently, they are located in contractor space and are not charged rent (+$1.1). Also, due to the planned closure of the Pinellas Area Office, Albuquerque's funding will increase in order to cover training and transition activities (+$1.5). A decrease of $6.4 million is based on the administrative expenses directly related to the number of employees on-board being reduced as the workforce continues to downsize. -3.8

Nuclear Material and Facility Stabilization -$55.6

- Funding for the Albuquerque Operations Office decreases from $84.2 million in FY 1997 to $29.0 million in FY 1998. This decrease reflects the reduction in Pinellas Plant landlord and cleanup costs due to completed plant cleanup and exit activities. -55.2

- Idaho funding decreases from $162.2 million in FY 1997 to $152.5 million in FY 1998. Stabilization funding has a net decrease due to partial funding of the plutonium focus area activity (-$3.9); increase to support site characterization studies and conceptual studies necessary to construct a dry transfer capability; and, procure a dry storage system for SNF (+$3.8). The remaining amount of the reduction is due to completion of a portion of the responsibility performance studies and completion of Spent Nuclear Fuel rack replacement (-$9.6). -9.7

- Nevada funding increases from $0.8 million in FY 1997 to $2.5 million in FY 1998. This characterization management funding is requested to develop a National model for projecting analytical needs and lab capacity. +1.7

- The FY 1998 request for Richland is $326.6 million, $30.2 million more than FY 1997. A decrease in deactivation funding reflects the completion of the PUREX deactivation project and the progress made on the B Plant deactivation project (-$9.2). The associated surveillance and maintenance of PUREX is transferred to the Environmental Restoration program (-$17.3). These decreases are offset by increases associated with activities transferred from the Waste Management program, including the surveillance and maintenance of Buildings 324 and 327 (+$15.0) and site support service activities that crosscut programs, such as meteorological climatological services, ecosystem management, environmental management, cultural resources and site wide planning, integration and risk assessment and management (+$25.3). Also, surveillance and maintenance activities increase because the Waste Encapsulation and Storage facility (WESF) will be a stand alone facility no longer receiving support from B Plant (+$5.0), and to support the start of fuel removal activities at K-Basin (+$11.4). +30.2

- Savannah River funding decreases from $514.3 million in FY 1997 to $492.3 million in FY 1998. A decrease in surveillance and maintenance funding reflects reductions in heavy water activities and deinventory of HB-Line vault (-$14.0). Associated stabilization funding is also reduced for the HB-Line vault (-$3.3). Site-wide support/landlord funding decreases due to the reduction of other landlord activities such as support for forest management, soil stabilization, sediment control, biological evaluations, etc. (-$10.1). And reduction in the alternative technology development program for Spent Nuclear Fuel (-$4.2). These decreases are offset by increases in receipt of additional casks of foreign research reactor fuel elements (+$9.6). -22.0

Environmental Science Program -$12.1

- New research starts will be minimized within the Basic Science program. Focus will be on dissemination of research results -8.0

- Focus of the Risk Policy program will be on continuing existing program commitments and risk issues critical to the success of the EM mission. -4.1

National Defense Asset Acquisition +$427.7

The Defense Environmental Restoration and Waste Management appropriation no longer includes funding for line-item capital construction projects. The FY 1998 request of $642.7 million for the construction funds associated with the above programs is contained within the

National Defense Asset Acquisition appropriation. The FY 1998 request is $427.7 million greater than the FY 1997 comparable amount. The FY 1998 request includes $165.7 million for the FY 1998 increment of the various line items, and an additional $477.0 million for the full funding associated with these projects.

- Waste Management +367.2

  Of the $458.3 million requested in FY 1998, $80.8 million is for the FY 1998 incremental funding of eleven on-going line item projects, and one new start. The additional $377.5 million provides upfront funding per the Administration's decision to fully fund fixed assets. The FY 1998 increment decreases by $10.3 million from the FY 1997 comparable amount due to the completion of several projects (replacement of cross-site transfer system at RL and Tank farm ventilation upgrade at RL) and other projects nearing completion (Install permanent electrical service at WIPP, Melton Valley storage tank capacity upgrade at OR; replacement high-level waste evaporator at SR).

- Nuclear Material and Facility Stabilization +60.5

  Of the $184.3 million requested in FY 1998, $84.9 million is for the FY 1998 incremental funding of ten on-going line item projects, and two new starts. The additional $99.4 million provides upfront funding per the Administration's decision to fully fund fixed assets. The FY 1998 increment decreases by $38.9 million from the FY 1997 comparable amount due to the completion of several projects (Disassembly basin upgrades at SR; hazardous materials training center at RL; and emergency response facility at ID) and other projects nearing completion (SNF canister storage and stabilization at RL; electrical upgrades at ICPP and INEL; upgrade of site road infrastructure at SR).

Defense Environmental Management Privatization

Budget Overview

The FY 1998 budget request of $1,006.0 million for the Defense Environmental Management Privatization appropriation is approximately 14 percent of the total FY 1998 budget request of $7,246.6 million for the Environmental Management programs.

	FY 1996 Comparable Appropriation	FY 1997 Comparable Appropriation	FY 1998 Request	FY 1997 vs. FY 1998	
EM Privatization					
Def. EM privatization init. (Fixed asset acquisition)	——	330,000	1,006,000	676,000	204.8%

Funding for the Hanford Tank Waste Treatment privatization project was appropriated in the Environmental Management Privatization section of Defense Environmental Restoration and Waste Management appropriation in FY 1997. Additional projects were appropriated funds in the Fixed Asset Acquisition section of the same appropriation. For FY 1998, a decision was made by the Administration to request Privatization activities as a single appropriation.

FY 1998 Budget Request

The FY 1998 budget request of $1,006.0 million will be set-aside for the capital portion of privatization contract obligations. The portion associated with the operation of the facilities within privatization contracts will be provided from within other EM accounts and will be identified for the years of operation. Generally, Budget Outlays of the capital portion will not occur until the privatization contractors deliver the products and services in accordance with DOE performance specifications. In the unlikely event that the Federal Government terminates contracts, the requested Budget Authority would be used to satisfy the termination liability of the Federal Government. The following projects are planned to be funded in FY 1998:

- Hanford Tank Waste Treatment, Richland.
- Contact Handled Transuranic Waste Transportation to the Waste Isolation Pilot Plant.
- Low Activity Waste Treatment Project at Idaho.
- Power Burst Facility Deactivation at Idaho.
- Spent Nuclear Fuel Dry Storage at Idaho.
- EM Waste Management Facility at Oak Ridge.
- TRU Solid Waste Treatment Facility at Oak Ridge.
- Waste Pits Remedial Action (OU-1) at Fernald.
- Fernald Silo 3 Residue Waste Treatment.
- Decommission Building 886 at Rocky Flats.
- Decommission Building 779 at Rocky Flats.
- Spent Nuclear Fuel Transfer and Storage at Savannah River.

FY 1998 Performance Goals and Measures

The goals of the Defense Environmental Management Privatization program are to: reduce cost of environmental cleanup on a life cycle basis; increase private sector competency,

efficiency, innovation and accountability in the environmental cleanup program; and, perform more cleanup for the funds expended.

FY 1998 success will be measured by:

- Increase in the number of environmental cleanups completed.
- Increase in the number of open, fixed-price contracts for cleanup projects.
- Improvement in the documentation of life cycle financial estimates for privatized projects to demonstrate savings and cost avoidances.
- Improvement in the documentation of schedule improvements as a result of privatized workscope.

Highlights of Program Changes ($ in millions)

Defense Environmental Management Privatization *(FY 1997: $330.0, FY 1998: $1,006.0)* **+$676.0**

- Eleven of the twelve projects listed within the FY 1998 Budget Request section are new privatization projects which account for $579.0 million. This request covers the capital funding portion, which generally will not be outlayed until FY 1999 or later +579.0
- The FY 1998 request for Hanford Tank Waste Treatment project is $257.0 million more than the FY 1997 comparable amount of $170.0 million. The additional funds are necessary to allow the selected contractors for Phase 1B of the project to design and construct facilities for treatment of between 6 to 13 percent of Hanford Tank Waste. +257.0
- Four other projects were funded in FY 1997 and no new funding is required in FY 1998. The projects were: 1) Advanced Mixed Waste Treatment (Idaho); 2) Broad Spectrum Low Level Mixed Waste Treatment (Oak Ridge); 3) Transuranic Waste Treatment (Oak Ridge); and 4) Pondcrete/Saltcrete (Rocky Flats). -160.0

Other Defense Activities

The Other Defense Activities appropriations account includes a variety of defense-related programs managed by different organizations: the Office of Nonproliferation and National Security; the Office of Worker and Community Transition; the Office of Fissile Materials Control and Disposition; the Office of Environment, Safety and Health; the Office of Hearings and Appeals; the Office of Nuclear Energy; and the Office of Naval Reactors.

	FY 1996 Comparable Appropriation	FY 1997 Comparable Appropriation	FY 1998 Request	FY 1997 vs. FY 1998	
Other Defense Activities					
Nonproliferation and National security	562,671	632,632	668,000	35,368	5.6%
Worker and community transition	81,550	62,000	70,500	8,500	13.7%
Fissile materials control and disposition	70,151	103,796	103,796	——	——
Environment, safety & health	36,997	48,326	54,000	5,674	11.7%
Office of hearings and appeals	1,200	1,840	2,685	845	45.9%
Nuclear Energy	104,030	68,500	81,000	12,500	18.2%
Naval reactors	658,047	668,232	626,000	-42,232	-6.3%
Subtotal, Other defense activities	1,514,646	1,585,326	1,605,981	20,655	1.3%
Use of prior year balances	-14,465	-3,767	——	3,767	100.0%
Total, Other Defense Activities	1,500,181	1,581,559	1,605,981	24,422	1.5%
Defense Assets Acquisition — Incremental Funding					
Naval reactors	*23,000*	*13,700*	*14,000*	*300*	*2.2%*
Total, Other Def. Act. plus Incremental Construction	*1,523,181*	*1,595,259*	*1,619,981*	*24,722*	*1.5%*
Defense Assets Acquisition — Transition to Full Construction Funding					
Naval reactors	——	——	*7,800*	*7,800*	——
Total, Other Defense Activities plus Construction	*1,523,181*	*1,595,259*	*1,627,781*	*32,522*	*2.0%*

Nonproliferation and National Security

Mission

To reduce the danger to U.S. National Security posed by Weapons of Mass Destruction (WMD) by: preventing the spread of WMD materials, technology, and expertise; detecting the proliferation of WMD worldwide; reversing the proliferation of nuclear weapons capabilities; and responding to WMD emergencies.

Program Overview

The President has made nonproliferation one of the Nation's highest priorities. The Office of Nonproliferation and National Security is the preeminent United States agency providing technological and analytical support to international efforts to prevent the proliferation of Weapons of Mass Destruction.

In FY 1997, the Department's mission was expanded when Congress appropriated $17.0 million to undertake a research and development program to address the technical means for detecting the presence, transportation, production, and use of materials to make biological and

chemical weapons. The Department's FY 1998 budget request increases the chemical and biological weapon nonproliferation initiative from $17.0 million to $23.0 million, and expands the initiative to include chemical and biological emergency management and response. The FY 1998 budget request also contains $13.0 million for increased initiatives to reduce the danger of nuclear smuggling and the associated potential for nuclear terrorism.

Stable long-term research and technology development and unique science and technology competencies must be maintained to support increasing demands in such critical areas as arms control, nonproliferation, intelligence, domestic nuclear safeguards and security, energy security, and emergency management. Current research and development efforts include the design and fabrication for actual deployment of sensor systems needed for treaty verification, proliferation detection, nuclear warhead dismantlement initiatives, and intelligence activities.

The arms control and nonproliferation program pursues the following major priorities: 1) secure Former Soviet Union nuclear materials and expertise at their source; 2) control weapons-usable fissile materials; 3) establish transparent and irreversible nuclear reductions; 4) strengthen the nuclear nonproliferation regime; and 5) control nuclear exports. The last several years have seen the growth of government-to-government and laboratory-to-laboratory cooperation programs between U.S. nuclear weapons experts and their Former Soviet Union counterparts to improve materials protection, control and accountability in the Former Soviet Union.

Increased safeguards and security technical support will need to be provided to field elements in light of increasing demands on facilities from the implementation of arms control accords as well as the continued requirement for more cost-efficient and effective security. Compliance with automatic declassification of Executive Order 12958 will require the Department to thoroughly review documents which may be marked as containing only National Security Information, but which also may contain unmarked Restricted Data and Formerly Restricted Data concerning nuclear weapons design and the military utilization of nuclear weapons. If this review is not done, such documents could be inadvertently released under the automatic declassification provisions of the Executive Order.

Budget Overview

Nonproliferation activities with the newly independent states (NIS) of the Former Soviet Union (FSU) remain a high priority in the FY 1998 budget request. As international cooperation increases with the NIS, additional budgetary resources are required to expedite the expansion and enhancement of NIS nonproliferation activities in critical areas such as export controls, nuclear materials protection, control and accounting, and preventing the spread of Weapons of Mass Destruction (WMD) technology and expertise. The FY 1998 budget request increases to $668.0 million, providing additional budgetary resources for urgently required nonproliferation activities in the NIS as well as increased resources to stem the proliferation of chemical and biological weapons and to reduce the danger of nuclear smuggling and the associated potential for nuclear terrorism.

	FY 1996 Comparable Appropriation	FY 1997 Comparable Appropriation	FY 1998 Request	FY 1997 vs. FY 1998	
Nonproliferation and National security					
Verification and control technology					
Nonproliferation and verification R&D	206,071	211,919	210,000	-1,919	-0.9%
Arms control	159,074	216,244	234,600	18,356	8.5%
Intelligence	30,877	34,185	33,600	-585	-1.7%
Total, Verification and control technology	396,022	462,348	478,200	15,852	3.4%
Nuclear safeguards and security	47,172	47,208	47,200	-8	-0.0%
Security investigations	20,000	20,000	20,000	——	——
Emergency management	16,866	16,794	27,700	10,906	64.9%
Program direction - NN	82,611	86,282	94,900	8,618	10.0%
Subtotal, Nonproliferation and National security	562,671	632,632	668,000	35,368	5.6%
Use of prior year balances	-45	——	——	——	——
Total, Nonproliferation and National security	562,626	632,632	668,000	35,368	5.6%

FY 1998 Budget Request

The FY 1998 Other Defense Activities budget request for the Office of Nonproliferation and National Security is $668.0 million, a $35.4 million increase over FY 1997, primarily due to an increase for Arms Control and WMD Nonproliferation Activities.

Nonproliferation and Verification Research and Development

This program applies unique science and technology development capabilities at the Department's National Laboratories to reduce the threat to U.S. National Security posed by WMD. This program's FY 1998 budget request of $210 million continues current research and development activities to provide the technology and tools to assist in arms control treaty monitoring, technical intelligence collection and processing technologies, and the technologies to detect the proliferation of WMD as well as the diversion of WMD materials. The research and development program maintains responsibility for all Comprehensive Test Ban research and development for underground, underwater, atmospheric, and space nuclear detonation detection. The FY 1998 Request also includes $19.0 million for the chemical and biological nonproliferation initiative and $4.0 million for the enhanced nuclear smuggling/terrorism initiative.

Arms Control

The Arms Control program FY 1998 budget request of $234.6 million increases our efforts to implement nonproliferation activities within the NIS to improve materials protection, control and accountability; prevent the spread of WMD expertise; assist former Soviet republics in establishing and enhancing nuclear material export control systems; and to provide technical support for long-term monitoring of Iraqi facilities and other nuclear safeguards and emergency programs of the International Atomic Energy Agency (IAEA).

In addition, the Arms Control program includes critical analytical, technical expertise, and operational support in the following areas: $5.0 million for spent fuel activities with the Democratic Peoples Republic of Korea (North Korea); $30.0 million for International Proliferation Program; $137.0 million for Materials Control and Accounting; the Nuclear Nonproliferation Treaty; Comprehensive Test Ban Treaty; Fissile Material Cutoff Treaty

negotiations; Biological Weapons Convention; IAEA inspection of excess U.S. fissile materials at DOE facilities; Mutual Reciprocal Inspection agreements with Russia on plutonium and highly enriched uranium; and reciprocal dismantlement, transparency and irreversibility agreements with Russia. The Arms Control budget request includes $2.0 million for the enhanced nuclear smuggling/terrorism initiative.

Intelligence

The Intelligence program FY 1998 budget request of $33.6 million continues to assess the activities of emerging nuclear weapon states and nuclear supplier states or other sources, such as theft and smuggling of nuclear materials internationally in support of the Department's policy makers and intelligence community. DOE provides technical, analytical, policy and implementation support to the efforts of the Nation's policy community to deal with such complex issues as denuclearization of the Korean peninsula, the protection of fissile material in the FSU and the achievement of arms control objectives, such as the Comprehensive Test Ban Treaty, Nuclear Nonproliferation Treaty, and Fissile Materials Cutoff Treaty. The FY 1998 budget request will sustain funding of $5.0 million for Counterintelligence activities, an amount equal to that appropriated in FY 1997. The Intelligence budget request includes $2.0 million for the enhanced nuclear smuggling/terrorism initiative.

Nuclear Safeguards and Security

This program is requesting $47.2 million in FY 1998. The request includes funding to provide effective policy and training for protection of the Department of Energy's (DOE) nuclear weapons, nuclear materials, classified information, and facilities. The program also provides technology development, technical direction and support to domestic safeguards and security at DOE facilities. The declassification program implements effective classification and declassification information policies and performs required declassification activities to ensure that classified information will not be released by the implementation of Executive Order 12958. The Nuclear Safeguards and Security budget request includes $2.0 million for the enhanced nuclear smuggling/terrorism initiative.

Security Investigations

The Security Investigations program is requesting $20.0 million in FY 1998. The request funds background investigations for DOE and contractor personnel who, in the performance of their official duties, require security clearance permitting access to Restricted Data, National Security Information, or Special Nuclear Material.

Emergency Management

The Emergency Management program is requesting $27.7 million in FY 1998. The request will provide comprehensive, integrated emergency planning, preparedness, response, and management throughout DOE. The increased funding will strengthen and expand DOE's support for domestic crisis and consequence management in combating WMD terrorism and nuclear, chemical, and biological material trafficking. The FY 1998 request also includes funding for the Department's Communications Center, previously part of the Human Resources and Administration program, and funding for threat assessment, previously funded

under the Intelligence program. The Emergency Management budget request includes $4.0 million for the chemical and biological weapon nonproliferation initiative and $2.5 million for the enhanced nuclear smuggling/terrorism initiative.

Program Direction

Finally, the FY 1997 budget is requesting $94.9 million for the Program Direction account. This includes funding for all Federal staffing, Headquarters support service contracts, and the Working Capital Fund.

FY 1998 Performance Goals and Measures

Assisting the Newly Independent States (NIS) Improving the Security of Nuclear Materials.

FY 1998 success will be measured by:

- Expanding cooperation with Russia and the NIS at every facility where at risk weapons-usable nuclear materials are stored and to which they are transported.

Limiting Weapons-Usable Fissile Materials Worldwide.

FY 1998 success will be measured by:

- The conversion of additional HEU-fueled reactors to low enriched uranium.

Establishing Transparent and Irreversible Nuclear Reductions Worldwide.

FY 1998 success will be measured by:

- Fully implementing all transparency measures and U.S. rights at all Russian facilities engaged in activities associated with the U.S.-Russian HEU Purchase Agreement.

Strengthening the Nuclear Nonproliferation Regime.

FY 1998 success will be measured by:

- Providing direct technical assistance to improve IAEA safeguards effectiveness and efficiency for IAEA inspections.
- Contributing to ratification/implementation of the Comprehensive Test Ban Treaty.

Controlling Nuclear Exports.

FY 1998 success will be measured by:

- Increasing laboratory-to-laboratory initiatives in the area of export controls to engage former Soviet Union scientists in the export control process.
- Expanding training in strategic material identification and illicit trafficking prevention focusing on NIS and East Europe.

Highlights of Program Changes ($ in millions)

Nonproliferation & Verification R&D *(FY 1997: $211.9, FY 1998: $210.0)* **-$1.9**

Increases funding for the chemical and biological nonproliferation initiative (+$2.0) and for the nuclear smuggling/terrorism initiative (+$4.0) offset by reductions to proliferation detection and materials detection R&D programs.

Arms Control *(FY 1997: $216.2, FY 1998: $234.6)* **+$18.4**

NIS nonproliferation activities continue to increase as cooperation increases for Materials Protection, Control, and Accounting activities to expedite the installation of systems, procedures, controls, facilities, and equipment to prevent the spread of nuclear weapon fissile materials (FY 1997: $112.6, FY 1998: $137.0) (+$24.4). Increases funding for the nuclear smuggling/terrorism initiative (+$2.0). Increases are offset by reductions to other Arms Control programs.

Intelligence *(FY 1997: $34.2, FY 1998: $33.6)* **-$0.6**

Increases funding for the nuclear smuggling/terrorism initiative (+$2.0) offset by reductions to other Intelligence activities.

Nuclear Safeguards and Security *(FY 1997: $47.2, FY 1998: $47.2)* **——**

Funding has been provided for the nuclear smuggling/terrorism initiative (+$2.0) offset by reductions to other Nuclear Safeguards and Security programs.

Security Investigations *(FY 1997: $20.0, FY 1998: $20.0)* **——**

Funding remains constant.

Emergency Management *(FY 1997: $16.8, FY 1998: $27.7)* **+$10.9**

Increases funding for the chemical and biological nonproliferation initiative (+$4.0) and for the nuclear smuggling/terrorism initiative (+$2.5); provides for the transfer of the Department's Communications Center (+$1.1) from Human Resources and Administration; and provides for the transfer of Threat Assessment Funding from Intelligence (+$3.3).

Program Direction *(FY 1997: $86.3, FY 1998: $94.9)* **+$8.6**

In addition to supporting core staffing requirements for the Office of Nonproliferation and National Security, the FY 1998 request restores funding for support service contracts which were reduced as a result of the FY 1997 appropriation. This funding will be used to meet requirements for the Declassification Initiative (+$3.0), Safeguards and Security (+$1.2), Arms Control (+$1.6), Research and Development (+$0.5), and other nonproliferation activities (+$2.3).

Worker and Community Transition

Mission

The Office of Worker and Community Transition was formed from Defense Program funded activities in September 1994 to assure the fair treatment of workers and communities affected by changing Department of Energy missions through the Worker and Community Transition program in accordance with Section 3161 of the Defense Authorization Act of 1993.

Program Overview

The Worker and Community Transition program provides work force restructuring activities related to the defense mission, local impact assistance to those communities affected by work force restructuring plans, and leadership and management of the development of short and long-term programs and initiatives that identify assets that are excess to current Department needs and are potentially available for sale, transfer, or reuse.

More specifically, the program provides overall coordination including final recommendation to the Secretary on approval of work force restructuring plans. Activities ensure effective work force planning that identifies and retains critical skills, knowledge and abilities; and provides appropriate public notice for work force restructuring. Strategies include providing preference to displaced workers for new hiring by the Department and providing retraining for the Environmental Restoration and Waste Management program or other employment opportunities. The program develops effective and efficient initiatives that limit involuntary layoffs and provides appropriate voluntary separation incentives, including severance enhancement, retraining assistance, outplacement assistance, relocation assistance, and extension of medical benefits.

Additionally, Congress has identified this program as the only authorized source of funding for local impact assistance to communities affected by work force restructuring plans. This includes many sites that have transitioned from Defense Programs management to Environmental Restoration and Waste Management. The Worker and Community Transition program assists communities affected by Departmental work force changes by developing policies and facilitating assistance for such communities to perform economic transition activities.

The functions of the Office of Asset Management were added to the Office of Worker and Community Transition in FY 1997. Asset Management functions will focus on pilot project proposals, such as recovery of precious metals from weapons components and electronic scrap recycling and use, which are designed to provide a financial return to the Federal government through the disposition of the assets as well as stimulating regional and local economic development.

The program successfully managed the reduction of over 37,000 contractor personnel between FY 1993 and 1996. Over 70 percent of separations to date have been voluntary, with an average (including workers separated through attrition) separation cost of approximately $15,000 per position. When attrition is excluded, average separation costs have been approximately $23,000. Annual savings from these reductions are estimated to exceed $2.3 billion in salaries and benefits and, if all overhead costs are included, as much as $4.7 billion. The community transition activities have maintained or led to the creation of more than 5,000 private sector jobs and 390 new businesses in twelve communities, with an anticipated 3,000 jobs and 135 new businesses per year over the next four years.

Budget Overview

The five year budget plan for the Worker and Community Transition program had been based on estimates developed during 1993 and 1994 that projected the Department's prime contractor work force being reduced to approximately 120,000 by the end of FY 1996. As a result of Departmental budget reductions, improved efficiency of operations, and other factors,

the prime contractor work force declined to approximately 111,889 by the end of FY 1996. A larger number of contractor work force reductions has increased budget requirements for the Worker and Community Transition program. Not only will worker restructuring requirements increase, but the demand for the Department to mitigate the impact on affected communities will also increase as a result of the contractor reductions exceeding original planning figures.

	FY 1996 Comparable Appropriation	FY 1997 Comparable Appropriation	FY 1998 Request	FY 1997 vs. FY 1998	
Worker and community transition					
Worker and community transition	77,359	57,659	65,800	8,141	14.1%
Program direction - WT	4,191	4,341	4,700	359	8.3%
Total, Worker and community transition	81,550	62,000	70,500	8,500	13.7%

The FY 1998 budget request for Worker and Community Transition is $70.5 million, which is $8.5 million more than FY 1997. Of the FY 1998 request level, approximately 53 percent will fund work force restructuring requirements, 40 percent will provide community transition assistance, and 7 percent for program direction, which includes the role of asset management.

FY 1998 Budget Request

The FY 1998 budget request for the Worker and Community Transition program is $70.5 million. An important element will be assistance for local economic development authorities, to promote rapid and effective defense conversion with new private sector jobs for displaced workers and new businesses for the community. In addition, the leadership and management of the asset management program will be incorporated into the Worker and Community Transition mission.

FY 1998 Performance Goals and Measures

The goals of Worker and Community Transition are to mitigate the impacts on displaced workers while humanely and cost-effectively managing the transition to a reduced work force that will better meet ongoing mission requirements; to mitigate the impacts on communities from contractor work force restructuring at Department sites; and to identify and dispose of excess Departmental assets.

FY 1998 success will be measured by:

- Gauging the effectiveness of the work force planning process at each site by holding to 2 percent or less the number of jobs vacated through incentivized and non-retirement separations that have to be filled by employees outside the DOE complex.
- Integrating the use of voluntary separations and other incentives with the work force planning process to keep involuntary separations to a range of 25-50 percent of all separations while assuring maintenance of essential work force skills mix and productivity and to meet changing mission requirements.
- Ensuring reemployment of at least 60 percent of separated workers seeking new jobs by sponsoring community-based businesses, career assistance programs, further education and retraining programs.
- Achieving annual cost savings from compensation and associated overhead for separated workers that is at least three times the one time cost of separation.
- Achieving $15.0 million in asset sales.

Highlights of Program Changes ($ in millions)

Worker and Community Transition **+$8.1**

Increase will provide additional funding for work force restructuring costs and community transition assistance payments anticipated due to changes in the defense mission, changes at former defense sites now managed by Environmental Management, and decreasing Department budget targets.

Program Direction **+$0.4**

Remains fairly constant from FY 1997 to FY 1998 with a slight increase for the Asset Management functions.

Fissile Materials Control and Disposition

Mission

In the aftermath of the Cold War, significant quantities of weapons-usable fissile materials (primarily plutonium and highly enriched uranium) have become surplus to National defense needs both in the United States and Russia. The danger exists not only in the potential proliferation of nuclear weapons, but also in the potential for environmental, safety and health consequences if the materials are not properly safeguarded and managed. The Department of Energy's (DOE) Office of Fissile Materials Disposition is responsible for the technical and management activities to provide for the safe, secure, environmentally sound future long-term storage of all weapons-usable fissile materials and the disposition of fissile materials declared surplus to National defense needs. The efforts undertaken by the Office of Fissile Materials Disposition contribute to the Administration's plans to irreversibly dispose of the Nation's surplus plutonium and highly enriched uranium and to reduce the number of sites where surplus weapons-usable materials are stored.

Program Overview

In July 1996, the Department issued a Record of Decision regarding the disposition of surplus highly enriched uranium (HEU) which calls for down-blending surplus highly enriched uranium to low enriched uranium for use in commercial reactor fuel. Because of the various forms of HEU and the availability dates from weapons dismantlement and site cleanup operations, this would take place over an estimated 15 to 20-year period.

In January 1997 the Department issued a Record of Decision regarding the storage of all weapons-usable fissile materials and the disposition of surplus plutonium. The Department will reduce the number of sites where plutonium is stored through a combination of storage alternatives and disposition alternatives. Surplus plutonium pits from Rocky Flats will be moved to Pantex. Stabilized and separated non-pit plutonium from Rocky Flats will be moved to Savannah River (after completion of an expansion to a new storage facility). Storage of surplus plutonium at other sites will continue, pending disposition. Highly enriched uranium will continue to be stored at Oak Ridge, pending disposition of the surplus.

The Department will pursue a plutonium disposition strategy that includes immobilization of surplus weapons plutonium in glass or ceramic forms and burning of surplus plutonium as mixed oxide (MOX) fuel in existing reactors. However, the Department has decided that at least 8 metric tons of surplus plutonium materials will be immobilized because they are not suitable for use in MOX fuel without extensive purification. The timing and extent to which either or both approaches are ultimately deployed will depend on follow-on work to resolve technical, institutional, cost and international issues. This will enable the President to initiate

plutonium disposition either multilaterally or bilaterally through negotiations or unilaterally as an example to Russia and other nations.

Budget Overview

The Program's efforts in FY 1997 and FY 1998 will focus on implementing the Records of Decision to disposition up to 85 percent of the surplus highly enriched uranium, by down-blending it with other surplus uranium materials to commercially usable low enriched uranium; consolidate long-term storage of surplus fissile materials pending disposition; design and demonstrate an integrated system to disassemble plutonium weapons components and convert the plutonium to stable, inspectable forms suitable for long-term storage and either disposition approach; and perform tests, process development, technology demonstrations, site-specific environmental reviews and detailed cost proposals for both plutonium disposition approaches. In addition to domestic-based activities, the program will build on the completed U.S./Russian joint study of technologies for the disposition of surplus plutonium and pursue a series of analyses and small scale tests and demonstrations of the disposition technologies. The Records of Decision and follow-on implementation efforts will directly contribute to advancing U.S. and international nonproliferation interests and to improving the cost-effectiveness of the Department's management of stockpiles of surplus fissile materials.

	FY 1996 Comparable Appropriation	FY 1997 Comparable Appropriation	FY 1998 Request	FY 1997 vs. FY 1998	
Fissile materials control and disposition					
Fissile materials control and disposition	66,687	100,163	99,451	-712	-0.7%
Program direction - MD	3,464	3,633	4,345	712	19.6%
Total, Fissile materials control and disposition	70,151	103,796	103,796	——	——

DOE will work with the Department of Defense and other agencies to identify additional quantities of highly enriched uranium in the National security stockpile that might be declared excess. Such a declaration would be made by the President, acting on the recommendation of the Nuclear Weapons Council. This additional material, when added to the current surplus, is estimated to result in up to $750.0 million in receipts in the form of forward sales for delivery in the decade following 2002. However, DOE's ability to identify additional excess material, and obtain necessary approvals and clearances is dependent on interagency actions.

FY 1998 Budget Request

Overall, the FY 1998 Other Defense Activities budget request for Fissile Materials Disposition is $103.8 million, the same as 1997. The FY 1998 storage budget decrease reflects DOE efforts to leverage off existing facilities and infrastructure (Actinide Packaging and Storage Facility at Savannah River and Zones 4 and 12 at the Pantex Plant) for the storage of surplus plutonium in a cost effective manner. The disposition budget increase will allow for the start of conceptual designs for disposition facilities and the continuation and expansion of tests and experiments required to resolve technological, cost, and institutional issues required to validate disposition technology options prior to implementation. Funding for U.S. and U.S.-Russian tests will help prepare for joint implementation of future plutonium disposition actions. Decreases in environmental analyses and activities performed by the Amarillo National Resource Center for Plutonium reflect the Program's completion of studies and the movement toward implementation. A modest increase of +4 FTEs over the FY 1996 baseline will enable prompt action in the implementation phase following the recent Records of Decision.

FY 1998 Performance Goals and Measures

Managing Surplus Weapons-Usable Fissile Materials

Implement a path forward for the verifiable storage and disposition of U.S. weapons-usable fissile materials and support efforts to attain reciprocal actions for disposition of surplus Russian plutonium.

FY 1998 success will be measured by:

- Complete design of a future storage facility for surplus non-pit materials and upgrades for surplus pit material.
- Complete shipment of Rocky Flats plutonium pits to Pantex.
- Complete the blend-down of the Kazakhstan origin HEU materials.
- Complete immobilization process development and select production immobilization form.
- Select site(s) for plutonium disposition.
- Complete process for possible selection of contractors for mixed oxide fuel plant and reactors.
- Support Government-wide efforts in coordinating with other nations on technical issues associated with disposition of surplus weapons-usable plutonium.

Highlights of Program Changes ($ in millions)

Fissile Materials Control and Disposition *(FY 1997: $100.2, FY 1998: $99.5)* **-$0.7**

Fissile Materials Control and Disposition overall net decrease of $0.7 million is the result of offsetting fluctuations at the subprogram level. Funding for disposition activities increased $16.4 million due to the start of conceptual design of plutonium disposition facilities and increased testing and demonstrations of disposition technologies. Storage options funding decreased by $11.4 million due to maximizing the use of the Department's existing and planned storage capabilities. NEPA compliance activities decreased by $3.0 million due to a reduction in environmental analyses and site-specific activities. Technical integration, support and associated technologies decreased $2.7 million due to completion of certain tasks related to disposition options.

Program Direction *(FY 1997: $3.6, FY 1998: $4.3)* **+$0.7**

Program Direction reflects a net increase of $0.7 million which will fund +4 FTEs over the FY 1996 baseline of 21 FTEs (+2 funded in FY 1997 with prior year balances), base salary adjustments in accordance with allowable inflation factors, and an increase for payroll outsourcing and indirect services in the Working Capital Fund. The modest increase in FTEs will provide the needed support in the implementation phase following the storage and disposition decisions while maintaining the FY 1997 total funding level in FY 1998.

Program Overview

The Other Defense Activities programs of the Office of Environment, Safety and Health are discussed in this section and are concentrated in three business functions: Oversight, Health Studies, and the Radiation Effects Research Foundation (RERF).

Oversight

The Oversight program provides the information and analysis needed to ensure that the Secretary of Energy, Department and contractor management, and all Departmental stakeholders have an accurate and comprehensive understanding of the effectiveness, vulnerabilities, and trends of the Department's environment, safety, health, and safeguards and security policies and programs. The Oversight program includes the Site Residents Program, Assessments, Accident Investigation, Analysis, Price-Anderson Amendment Acts of 1988 Enforcements, and the Departmental Representative to the Defense Nuclear Facilities Safety Board. The primary goal of the Oversight program is to promote constructive change in the Department's environment, safety, health, safeguards, and security management programs through a continuous cycle of independent assessments, analysis, reports and follow-up validation.

Health Studies

The Health Studies program promotes the health and safety of Department of Energy workers and supports continued efforts to understand the effects of radiation on humans. It is comprised of three programs: Occupational Medicine, which is focused on identifying and tracking occupationally-related health effects among worker populations; Epidemiologic Studies, which includes the management of worker injury and illness data to identify emerging health issues associated with job exposures and to evaluate the impact of health and safety practices at Departmental facilities; and International Health Studies, which includes health and environmental programs supporting the expanded knowledge of health effects resulting from radiation exposure in the Marshall Islands and the Soviet Union.

Radiation Effects Research Foundation (RERF)

The RERF is the successor of the Atomic Bomb Casualty Commission, which was established to investigate the effects of radiation exposure in survivors of the atomic bombings of Hiroshima and Nagasaki. Funding for the RERF is provided equally by the Government of Japan, through the Ministry of Health and Welfare, and the U.S. Government, through DOE. The objective of the RERF is to collect data, for peaceful purposes, on the medical effects of radiation on man, with a focus on contributing to the health and welfare of the atomic bomb survivors. The RERF also evaluates diseases that may be affected by radiation. Previously, the funding for the RERF was requested within the Non-Defense Environment, Safety and Health account. In FY 1997, Congress appropriated the RERF within the Defense Environment, Safety and Health account due to its focus on defense-related incidents.

Budget Overview

The FY 1998 budget request for the Defense Environment, Safety and Health programs is $54.0 million, which is $5.7 million, a 12 percent increase, over the FY 1997 comparable amount. Of the FY 1998 request, approximately 26 percent is for Oversight, 47 percent is for Health Studies, and 27 percent is for the Radiation Effects Research Foundation.

	FY 1996 Comparable Appropriation	FY 1997 Comparable Appropriation	FY 1998 Request	FY 1997 vs. FY 1998	
Environment, safety & health	36,997	48,326	54,000	5,674	11.7%

FY 1998 Budget Request

The Defense Environment, Safety and Health Oversight program is requesting $14.0 million in FY 1998, a decrease of $0.5 million, or 4 percent, under the FY 1997 comparable amount. The program will continue to promote effective line management performance, identify issues appropriate for the attention of senior managers, provide updates on the progress of corrective actions, ensure accidents are adequately investigated, and provide oversight of Price-Anderson enforcement activities.

The Health Studies program is requesting $25.5 million in FY 1998, an increase of $6.7 million, or 36 percent, above the FY 1997 comparable amount. The Defense Health Studies program will continue the Marshall Islands medical surveillance program ($6.8 million), U.S.-Russian studies of contaminated regions, epidemiological surveillance of DOE workers, and identification of occupational health concerns. The FY 1998 request marks the first time that all support for the DOE former workers program is provided within the Environment, Safety and Health account. It was previously funded by the Offices of Environmental Management, Defense Programs, and Environment, Safety and Health.

The Radiation Effects Research Foundation is requesting $14.5 million in FY 1998, a decrease of $0.5 million, or 3 percent, below the FY 1997 appropriated amount. The RERF will continue to monitor the effects of radiation resultant from the atomic bombings and to promote the welfare of the atomic bomb survivors, while working with the Japanese government to implement cost efficiencies.

FY 1998 Performance Goals and Measures

Identify practical ways to address the most significant health risks to former workers at DOE sites.

FY 1998 success will be measured by:

- Completion of an additional six needs assessments establishing the basis for a more detailed program of medical follow-up.

Highlights of Program Changes ($ in millions)

Oversight *(FY 1997: $14.5, FY 1998: $14.0)* **-$0.5**

Oversight decreases due to the continued streamlining of baseline assessment costs and the cost of developing initial site profiles, as well as the completion of specific developmental activities associated with Analysis. The decrease is offset, in part, by the expansion of active enforcement activities related to Price-Anderson nuclear safety requirements.

Health Studies *(FY 1997: $18.8, FY 1998: $25.5)* **+$6.7**

Health Studies increase due to the consolidation of all Departmental support for the Occupational Medicine former workers program within the Environment, Safety and Health program (+$4.8), and increases in International Health Studies (+$1.8).

Radiation Effects Research Foundation *(FY 1997: $15.0, FY 1998: $14.5)* **-$0.5**

Radiation Effects Research Foundation support decreases through the implementation of cost-efficiencies coordinated with the Japanese government.

Office of Hearings and Appeals

Mission

The Office of Hearings and Appeals (OHA) is responsible for all of the Department's adjudicatory processes, other than those administered by the Federal Energy Regulatory Commission. Historically this office has been funded by Interior appropriations, in order to adjudicate cases arising under the Emergency Petroleum Allocation Act of 1973 (EPAA). The goal of OHA is to issue prompt, high quality decisions that fairly and equitably resolve the matters that are brought before it, including, but not limited to determining the eligibility of individuals to hold security clearances.

Program Overview

Over the years, OHA has gained jurisdiction over a wide variety of matters including: Freedom of Information Act and Privacy Act Appeals, evidentiary hearings to determine an employee's eligibility for a security clearance, and requests for exception from DOE regulations and orders, such as reporting requirements to Departmental elements. Funding for this activity is being sought in Energy and Water Development appropriations.

Budget Overview

Until FY 1996, the Office of Hearings and Appeals always received full funding for its activities through the Interior and Related Agencies appropriations bill. For FY 1996, Congress funded only activities arising from the Emergency Petroleum Allocations Act of 1973, and directed OHA to charge Departmental elements (directed at Energy and Water Development funds) for support provided to them by OHA. These activities are primarily proceedings concerning eligibility of employees for security clearances and appeals of Freedom of Information Act determinations.

	FY 1996 Comparable Appropriation	FY 1997 Comparable Appropriation	FY 1998 Request	FY 1997 vs. FY 1998	
Office of hearings and appeals	1,200	1,840	2,685	845	45.9%

FY 1998 Budget Request

The Office of Hearings and Appeals is seeking $2.7 million of new authority in Other Defense Activities to conduct appeals to security investigations, appeals of Freedom of Information Act determinations and other Departmental appeals. This request is in addition to a $2.7 million request for Interior funds to finance its oil overcharge activities (EPAA). Most expenses are related to its professional staff with Personnel Compensation and Benefits expenses equal to $2.0 million, travel expenses equal to $0.1 million, and Support Services equal to $0.6 million. Support services are primarily provided within the Department's Working Capital Fund, and include rent, supplies, printing and communication and information technology.

Highlights of Program Changes ($ in millions)

Office of Hearings and Appeals *(FY 1997: $1.8, FY 1998: $2.7)* **+$0.9**

This increase is needed to fully fund all of the program requirements identified with Energy and Water Development appropriations, for example, Freedom of Information and Privacy Act appeals.

Nuclear Energy

Mission

The Office of Nuclear Energy, Science & Technology provides technical leadership for domestic and international nuclear security and safety issues and strives to maintain nuclear energy as a viable source to meet future energy requirements and environmental objectives in the United States and other countries.

Program Overview

To fulfill its mission, Nuclear Energy manages efforts to improve the safety of nuclear reactors in the U.S. and abroad; supports development of technologies to address the issues associated with long-term operation of nuclear power plants; provides durable and reliable nuclear power systems to NASA and National security customers; helps to ensure a reliable supply of medical, industrial and research isotopes; and supports the U.S. nuclear education infrastructure. The activities provided for in the Other Defense Activities appropriation are discussed in this section. Programs supported by the Energy Supply R&D appropriation were discussed earlier.

The collapse of the Soviet Union left many emerging democratic countries in Central and Eastern Europe and the former Soviet Union without the technical and financial resources needed to operate the Soviet-designed nuclear power plants in a safe manner. Since 1992, Nuclear Energy has led the Department's efforts to develop a nuclear safety infrastructure and establish a safety culture at powerplants in Russia, Ukraine, and other countries in the region. The goal of the Department's International Nuclear Safety Program is to reduce the health and environmental threats posed by aging nuclear reactors in these nations and to prevent the occurrence of a devastating Chornobyl-type accident. Pacific Northwest National Laboratory is the technical manager of this effort.

A second Departmental initiative in FY 1997 is to cooperate with Russia to shutdown its plutonium-producing reactors, as directed by the Gore-Chernomyrdin agreement of June 1994. One of the program's most important near-term efforts is to cooperate with Russia to convert the current reactor cores to non-weapons-grade plutonium producing cores, which would allow the affected communities to continue receiving much-needed energy while a long-term strategy is developed. These projects will be funded by the Department of Defense in FY 1998. The Department will also address other nuclear safety and proliferation issues related to breeder reactors in the republics of the former Soviet Union, and develop spent fuel management plans to reduce the need for fuel reprocessing in these countries. All these activities are designed to alleviate proliferation concerns related to the use of nuclear reactors by the nations of the former Soviet Union.

The Chornobyl Initiative program is another activity directed at the National security and environmental threats posed by the continued operation of the Chornobyl nuclear power plant. The program is focused on securing the eventual closure of the Chornobyl plant and addressing the ultimate disposition of Chornobyl's destroyed Unit-4.

Nuclear Technology R&D will continue efforts at Argonne National Laboratory - West to complete demonstration of the application of electrometallurgical technology to treat sodium-bearing spent fuel removed from the Experimental Breeder Reactor-II (EBR-II).

Budget Overview

The FY 1998 Nuclear Energy budget request within the Other Defense Activities appropriation is $81.0 million, which is a $12.5 million increase over the FY 1997 appropriation. The total funding requested by Nuclear Energy for civilian and defense activities in FY 1998, excluding $647.8 million for Naval Reactors, is $411.7 million.

	FY 1996 Comparable Appropriation	FY 1997 Comparable Appropriation	FY 1998 Request	FY 1997 vs. FY 1998	
Nuclear Energy					
Nuclear technology research and development	25,000	20,000	25,000	5,000	25.0%
International nuclear safety	79,030	43,500	50,000	6,500	14.9%
Nuclear security	——	3,500	4,000	500	14.3%
Chornobyl shutdown initiative	——	1,500	2,000	500	33.3%
Total, Nuclear Energy	104,030	68,500	81,000	12,500	18.2%

Besides funding in this Other Defense Activities appropriation, the Office of Nuclear Energy, Science and Technology is requesting $330.7 million in the Energy Supply R&D appropriation. The funds will be used to support high priority activities such as the production of power sources for NASA and National security missions, research and development activities designed to address technical issues associated with the continued operation of U.S. nuclear power plants, and to carry out the Department's residual uranium program activities.

FY 1998 Budget Request

The FY 1998 request for Nuclear Technology R&D will continue efforts at Argonne National Laboratory - West to complete demonstration of the electrometallurgical technology as an EBR-II spent fuel treatment.

Over half the FY 1998 request for International Nuclear Safety is needed to improve the physical condition of Soviet-designed reactors ($16.5 million) and to establish sound operational procedures and responses to operational abnormalities ($17.5 million). Funding provides for physical plant improvements such as revamped safety control panels, better confinement mechanisms, emergency power supply systems, and safety training for plant managers and employees. Other key aspects of the program are the Plant Safety Evaluations ($7.0 million), International Nuclear Safety Centers ($1.0 million), Nuclear Safety Legislative & Regulatory Support ($2.0 million), International Nuclear Safety Activities Support ($1.0 million) and Program Management ($5.0 million). The Chornobyl Shutdown effort is a separate program in FY 1998.

The FY 1998 Nuclear Security budget request of $4.0 million will support Spent Fuel Management activities ($2.9 million), and Nuclear Safety and Nonproliferation Cooperation with International Agencies and Foreign Countries ($1.1 million). Support for reactor Core Fuel Conversion & Safety Analysis will be provided exclusively from Department of Defense Cooperative Threat Reduction funds.

As stated above, the Chornobyl Initiative effort is a separate program in FY 1998. The overriding concern of the program is to reduce the National security and environmental threats posed by the continued operation of the Chornobyl Nuclear Power Plant by securing its closure. The Department anticipates the receipt of $25 million from the U.S. Agency for International Development (AID) during the current fiscal year to support decontamination and decommissioning activities at the Chornobyl sarcophagus. The Department also expects to receive $27 million from AID to support this work in FY 1998. The $2.0 million request

will allow the program to continue the development of joint projects with the International Chornobyl Center for Nuclear Safety, Radioactive Waste and Radioecology.

FY 1998 Performance Goals and Measures

Enhancing the Safety of Soviet-Designed Reactors

Improve the safety of Soviet-designed nuclear power plants in Russia, Ukraine, and Central and Eastern Europe to correct safety problems endemic to Soviet-designed reactors.

FY 1998 success will be measured by:

- Continue training and technology by pilot plants and host country organizations in operational safety areas.
- A completed detailed fire hazard evaluation at the Smolensk plant in Russia.
- In-depth safety analysis conducted at selected plants.

Assisting in the Shutdown of the Chornobyl Nuclear Power Plant

Assist in the multi-national effort to shutdown the Chornobyl nuclear power plant in Ukraine in order to reduce environmental and safety threats.

FY 1998 success will be measured by:

- Implementing G-7 Memoranda of Understanding measures, to stabilize Chornobyl's Unit-4 sarcophagus and ultimately shutdown the Chornobyl plant.
- Assisting the Chornobyl Nuclear Safety Center in shutting down the remaining operating Chornobyl reactors.

Shutting Down and Cleaning Up Surplus Non-Weapons Nuclear Reactor Sites

Safely deactivating surplus nuclear facilities, including the Fast Flux Test Facility (FFTF) reactor in the State of Washington, and the Experimental Breeder Reactor-II (EBR-II) in Idaho, and prepare wastes for interim storage and ultimate disposition.

FY 1998 success will be measured by:

- Continuing demonstration of the electrometallurgical treatment of EBR-II spent fuel.
- Continuing shutdown of EBR-II and other unneeded ANL-W facilities, and placing the facilities in an industrially and radiologically safe condition.
- Converting EBR-II sodium coolant to sodium carbonate.
- Placing FFTF spent fuel into interim, dry cask storage by September, 1998.

Highlights of Program Changes ($ in millions)

Nuclear Technology R&D *(FY 1997: $20.0, FY 1998: $25.0)* **+$5.0**

The increase in funding requirements will fund feasibility experiments on the treatment of aluminum-based and oxide spent fuels.

International Nuclear Safety *(FY 1997: $43.5, FY 1998: $50.0)* **+$6.5**

- Management & Operational Safety Improvements (FY 1997: $11.9, FY 1998: $17.5) increase is due to the new projects in form management and quality assurance. +5.6
- Engineering & Technology Upgrades (FY 1997: $10.3, FY 1998: $16.5) Additional funding will provide for additional Safety Parameter Display Systems at RMBK plants. +6.2
- U.S. International Nuclear Safety Center at ANL (FY 1997: $4.0, FY 1998: $1.0) The Center at ANL is now established. The request FY 1998 represents the annual operating costs. -3.0
- Chornobyl Shutdown Initiative (FY 1997: $1.5, FY 1998: $0) is a separate program in FY 1998. -1.5

Nuclear Security *(FY 1997: $3.5, FY 1998: $4.0)* **+$0.5**

Continue spent fuel management activities related to breeder reactors and other international cooperation efforts. Core conversion activities will be funded from the transfer of funds expected from U.S. Agency for International Development.

Chornobyl Initiative *(FY 1997: $1.5, FY 1998: $2.0)* **+$0.5**

Activities related to the operation of the International Chornobyl Center were previously funded under the International Nuclear Safety program in FY 1997. The increase will support additional work at the Center to support the decontamination and decommissioning of Unit-4.

Naval Reactors

Mission

Naval Reactors mission is to provide the Navy with safe, long-lived, militarily-effective nuclear propulsion plants in keeping with the Nation's defense requirements, and to ensure their continued safe and reliable operation.

Program Overview

Naval Reactors responsibility extends to all aspects of Naval nuclear propulsion - from technology development through reactor operations to, ultimately, reactor plant disposal. The Program's efforts are critical to the continued success of over 115 reactors in operating submarines and surface ships, comprising 40 percent of the Navy's warships, and to the New Attack Submarine class under development. Naval Reactors is responsible for more reactors than the entire U.S. commercial nuclear power generating industry and has almost the same number as the next three largest commercial nuclear power generating nations in the world combined (France, Japan, and the United Kingdom).

The program will maintain an integrated, comprehensive, and far-sighted analytical, development and testing effort for existing and future reactor plants. This will be accomplished in a number of ways, to include: continuously test, verify, and refine reactor technology — and integrate new technologies and techniques into existing system and component designs — to improve overall reactor plant performance, reliability and longevity; rigorously test materials, fuel, cores, components and systems; and develop simplified, more

affordable reactors with improved power capabilities, increased endurance, and added dependability.

Continuing development efforts are yielding greater capabilities. Major efforts for the near future include upgrades to existing components and equipment to help extend operating ship lifetimes and improve overall reactor plant performance, and development/testing of the next generation reactor components and systems for the Navy's New Attack Submarine class -- including the first true life-of-the-ship core, which will obviate the need for expensive refuelings, and the new concept steam generator, which should greatly reduce corrosion concerns.

The Program's cost-saving initiatives led to shutting down six of eight land-based test/ research and development prototype plants. Though creating a substantial initial cost savings, full realization of savings is dependent upon completion of a substantial, multi-year inactivation servicing effort on the shutdown plants.

Budget Overview

The FY 1998 budget request for the Naval Reactors program reflects the above described activities. Naval Reactors major priorities, in order, include: 1) support the current operating fleet (location of the majority of the funds); 2) continue development of the New Attack Submarine; and 3) evaluation and servicing work - operating two prototypes and inactivating six shutdown prototypes.

	FY 1996 Comparable Appropriation	FY 1997 Comparable Appropriation	FY 1998 Request	FY 1997 vs. FY 1998	
Naval reactors					
Naval reactors development	639,517	649,330	605,920	-43,410	-6.7%
Program direction	18,530	18,902	20,080	1,178	6.2%
Subtotal, Naval reactors	658,047	668,232	626,000	-42,232	-6.3%
Use of prior year balances	-272	——	——	——	——
Total, Naval reactors	657,775	668,232	626,000	-42,232	-6.3%
Defense Assets Acquisition — Incremental Funding					
Naval reactors development	*23,000*	*13,700*	*14,000*	*300*	*2.2%*
Total, Naval Reactors plus Incremental Construction	*680,775*	*681,932*	*640,000*	*-41,932*	*-6.1%*
Defense Assets Acquisition — Transition to Full Construction Funding					
Naval reactors development	——	——	*7,800*	*7,800*	——
Total, Naval Reactors plus Construction	*680,775*	*681,932*	*647,800*	*-34,132*	*-5.0%*

FY 1998 Budget Request

The FY 1998 Other Defense Activities budget request for Naval Reactors is $647.8 million. Beginning with FY 1997, the Naval Reactors Development operating categories were realigned to more accurately reflect future activities and simplify the structure. The change highlights the increasing importance of materials efforts as the age of the nuclear fleet increases, and shifts the emphasis on the test/research and development prototype plants from operations to the servicing effort which will be required now that six of the eight plants are shutdown.

The budget request represents the amount needed for the following principal efforts:

- Continue development efforts to ensure reactor plant service lives meet the Navy's goals for extended warship operation: 50 years for aircraft carriers, 40 years for

strategic submarines, and 30 years for attack submarines; including improving steam generator technology; developing new instrumentation and power distribution equipment; and testing and evaluating core and plant materials for satisfactory long life operation.

- Conduct necessary reactor plant analyses in the areas of nuclear physics, reactor configuration and design, analytical modeling and thermal hydraulics, and improve core performance predictive techniques to ensure safety and reliability of over 115 reactor plants in the Navy's nuclear powered warships so they can fulfill their National defense mission.
- Develop and test technologies and reactor plant components and systems to support achieving Navy noise reduction goals.
- Conduct reactor and reactor plant testing under operating conditions and correlate performance with predictions. The intent is to continue the current 90 percent utilization factor for land-based prototype plants, a measure of the prototypes' availability for scheduled testing, training, and servicing needs.
- Inactivate, to the extent possible, six shutdown test reactor plants to support the Department's environmental clean up goals.
- Complete an estimated cumulative 45 percent of New Attack Submarine plant development and testing work in FY 1996, 60 percent in FY 1997, and 75 percent in FY 1998.
- Continue the safe environmental record of the Naval Nuclear Propulsion Program, as demonstrated by ensuring no personnel exceed Federal limits for radiation exposure and no significant findings result from environmental inspections by State and Federal regulators.

Highlights of Program Changes ($ in millions)

Reactor Technology and Analysis *(FY 1997: $194.0, FY 1998: $192.0)* **-$2.0**

The decrease reflects progress in fabricating next generation reactor test components.

Materials Development and Verification *(FY 1997: $110.0, FY 1998: $115.0)* **+$5.0**

The increase reflects increased materials analysis and testing needed as Navy ships are kept in service longer and materials are called upon to perform safely and reliably over longer time periods.

Plant Technology *(FY 1997: $116.0, FY 1998: $112.9)* **-$3.1**

The decrease reflects progress on reactor plant development efforts for the Navy's new attack submarine, including development of the new concept steam generator, a major innovation which should greatly reduce corrosion concerns in steam generators.

Evaluation and Servicing *(FY 1997: $180.1, FY 1998: $136.0)* **-$44.1**

The decrease reflects a decline in inactivation work on the shutdown prototype reactor plants. The land-based reactor plant inactivation activities include environmental remediation,

evaluating reactor core performance data and reducing caretaker costs. The FY 1998 budget request will support partial accomplishment of the planned work. The partially inactivated plants will be left in a safe shutdown condition.

Defense Nuclear Waste Disposal

Mission

The goal of the Defense Waste Disposal Program is to dispose of high-level waste generated from atomic energy defense activities. The primary focus of this program is to find a long term geological repository for Defense Nuclear Waste. This effort supports the Yucca Mountain Site Characterization Project and is described in greater detail in the Nuclear Waste Disposal Fund Section of the Budget Highlights. The FY 1998 request is $190.0 million and the planned FY 1999 request will be $190.0 million.

	FY 1996 Comparable Appropriation	FY 1997 Comparable Appropriation	FY 1998 Request	FY 1997 vs. FY 1998	
Defense nuclear waste disposal	248,400	200,000	190,000	-10,000	-5.0%

Defense Assets Acquisition

As part of an Administration-wide focus on improving the planning, budgeting and acquisition of capital assets, two new changes were introduced in the FY 1998 budget: three new accounts were created for line-item construction projects and full funding through regular appropriations is requested for programmatically-viable segments of all new and on-going line-item capital projects. The Defense Assets Acquisition appropriation was created for construction projects previously funded within the Weapons Activities, the Environmental Restoration and Waste Management, and the Other Defense Activities appropriations. A total of $2,166.9 million is requested for FY 1998 for seven new and forty-four on-going projects.

	FY 1996 Comparable Appropriation	FY 1997 Comparable Appropriation	FY 1998 Request	FY 1997 vs. FY 1998	
Defense Assets Acquisition					
Weapons activities					
Stockpile stewardship	119,905	220,237	1,049,426	829,189	376.5%
Stockpile management	113,625	94,361	452,969	358,608	380.0%
Total, Weapons activities	233,530	314,598	1,502,395	1,187,797	377.6%
Defense environmental restoration & waste management					
Waste management	140,056	91,127	458,318	367,191	402.9%
Nuclear materials and facilities stabilization	106,721	123,872	184,346	60,474	48.8%
Total, Defense environ. restoration & waste mgmt	246,777	214,999	642,664	427,665	198.9%
Other defense activities					
Naval reactors					
Naval reactors development	23,000	13,700	21,800	8,100	59.1%
Total, Defense Assets Acquisition	503,307	543,297	2,166,859	1,623,562	298.8%

Full funding of capital assets will promote more effective project planning, budgeting, and management by helping to ensure that all costs and benefits are evaluated when decisions are made about providing resources. When full funding is not followed and capital assets are funded incrementally, without certainty if or when future funding will become available, it can and occasionally does result in poor risk management, weak planning, acquisition of assets not fully justified, higher acquisition costs, cancellation of major projects and loss of sunk costs, and inadequate funding to maintain and operate the assets. Full funding was endorsed by the General Accounting Office in its recent report, *Budgeting for Federal Capital* (November 1996). This practice is followed for most Department of Defense procurement and construction programs and for General Services Administration buildings, although it traditionally has not been followed for large-scale acquisition at the Department of Energy.

The use of separate construction accounts is intended to smooth out year-to-year changes in budget authority and outlays and to avoid crowding of other expenditures. In addition,

inclusion in the appropriations language of a provision to prevent re-programming will contribute to the Department of Energy's ability to meet the performance requirements outlined by the Federal Acquisition and Streamlining Act of 1994 (FASA), Title V.

Departmental Administration

Mission

The offices funded in the Departmental Administration appropriation account provide headquarters guidance and support benefitting all operating elements of the Department in such areas as human resources, administration, accounting, budgeting, legal services, information management systems, life cycle asset management, workforce diversity, policy, congressional liaison, and public affairs. Their mission is to provide internal and external customers with timely, quality service which facilitates achievement of the Department's goals.

Program Overview

Organizations supported in this appropriation include the Office of the Secretary; Human Resources and Administration; Chief Financial Officer; Headquarter's Field Management; Congressional, Public, and Intergovernmental Affairs; General Counsel; Policy; Economic Impact and Diversity; and the Board of Contract Appeals. In addition, the account budgets for the Cost of Work for Others, which provides for the cost of products and services provided by the Department's laboratories and other contractors to non-Departmental users. Finally, this account also receives offsetting revenues from the goods and services associated with the Cost of Work for Others program as well as miscellaneous revenues from a variety of other sources.

Budget Overview

The Department is proposing a new $8.0 million initiative in this account to finance a Corporate Management Information System to reduce duplication within the Departmental Complex. For example, the Department needs a corporate financial system to integrate diverse information from various sources into a decision support system for senior management.

In support of the Department's overall mission, this account provides funding for nine, main Department-wide management organizations. The primary functions of these organizations encompass such diverse activities as policy and planning, finance and personnel, legal and procurement, life cycle asset management, information management systems, data processing, congressional and public liaison, civil rights, training and management of Working Capital Fund activities. The total on-board head count projected for FY 1998 is 1,319 and reflects a 31 percent decrease from the FY 1995 baseline of 1,920, including the Office of the Secretary. This decrease is in line with the Secretary's Strategic Alignment Initiative. Additionally Departmental Administration provides for programmatic activities such as energy and environmental policy studies, minority education, business/community support and assistance, and Department-wide technical training development.

	FY 1996 Comparable Appropriation	FY 1997 Comparable Appropriation	FY 1998 Request	FY 1997 vs. FY 1998	
Departmental Administration					
Administrative operations					
Office of the Secretary	3,352	2,852	2,850	-2	-0.1%
Human resources and administration	114,085	104,202	109,962	5,760	5.5%
Chief financial officer	24,170	22,855	22,396	-459	-2.0%
Field management	10,466	6,854	8,261	1,407	20.5%
Board of contract appeals	569	602	726	124	20.6%
Congressional, public, & intergovernmental affairs	10,129	8,925	7,983	-942	-10.6%
General counsel	18,871	18,811	20,940	2,129	11.3%
Policy	25,252	19,882	20,629	747	3.8%
Economic impact and diversity	7,263	6,054	6,795	741	12.2%
Total, Administrative operations	214,157	191,037	200,542	9,505	5.0%
Cost of work for others	22,826	26,336	32,062	5,726	21.7%
Subtotal, Departmental Administration (gross)	236,983	217,373	232,604	15,231	7.0%
Use of prior year balances & other adjustments	-16,971	-2,352	——	2,352	100.0%
Total, Departmental administration (gross)	220,012	215,021	232,604	17,583	8.2%
Revenues					
Revenues associated with cost of work	-26,394	-29,788	-35,514	-5,726	-19.2%
Other revenues	-78,704	-95,600	-95,816	-216	-0.2%
Total, Revenues	-105,098	-125,388	-131,330	-5,942	-4.7%
Total, Departmental Administration (Net)	114,914	89,633	101,274	11,641	13.0%

Headquarters

The FY 1998 Congressional request provides $104.5 million for related salary and benefit expenses for 1,297 full-time equivalent employees, excluding the Office of the Secretary. The request also includes travel funding of $3.1 million which continues a downward trend since FY 1993. Funding for contractual services and program support are $74.3 million and $15.8 million, respectively. Examples of significant program support activities are: efforts to advance U.S. policies to facilitate U.S. private sector investment; analyze and assess emerging clean air issues as they impact the Administration's Climate Change Action Plan; support the Department's corporate information management system; public service announcements; news wire service; minority education/business community support and assistance; and DOE technical training development. Finally, the request also includes $2.9 million of funding for the Office of the Secretary to support 22 full-time equivalent employees.

Working Capital Fund
FY 1998 Activities
($ in thousands)

Building Rent & Operations	$54,394
Office Automation (AOSS)	2,420
Telephone Services	7,107
Postage	3,160
Printing and Graphics	6,637
Supplies	3,300
Copiers	2,566
Contract Closeouts	436
Contract Audits	9,873
Payroll and Personnel	2,589
Networking	2,581
Total	$95,063

Working Capital Fund

The Working Capital Fund finances business-type activities to: ensure that program mission budgets include a fair allocation of the costs of common administrative services; improve the efficiency of administrative services by providing managers with the opportunity and responsibility to make choices on the amount, priority, and, where possible, the sources of administrative services used by their programs; and expand the flexibility of the Department's budget structure to permit service providers to respond to customer needs. The Working Capital Fund Board composed of ten members and chaired by the Assistant Secretary for Human Resources and

Administration has adopted specific pricing policies for the various business lines. Such pricing policies form the basis for the FY 1998 submission. The Board has also approved a pricing policy for an eleventh business line, Payroll Processing and Personnel, included in the Department's FY 1998 proposed budget.

Cost of Work for Others

The budget request of $32.1 million provides for the cost of products and services provided by the field offices and National laboratories for non-DOE users. Work results from revenue programs related to DOE's mission or its reimbursable work for State and local entities which are precluded by law from making advance payments. Costs are offset with revenues received from the sale of products or services. Examples of proposed FY 1998 revenue generating products or services are timber sales, utility sales, seismic monitoring, and research and development activities conducted for State and local governments.

Revenues

Revenue estimates of $35.5 million are associated with the Cost of Work for Others program and supports the products and services described above. Miscellaneous revenues of $95.8 million are derived from the sale of by-products that have no costs associated with the Departmental Administration appropriation, but which offset the appropriation. Examples are: lease of Oak Ridge Operations facilities (Gaseous Diffusion Plant) by the U.S. Enrichment Corporation, handling and basin storage of spent fuel cores from Navy ships, residual material (uranium) in the spent fuel cores, and added factor and depreciation from the DOE Reimbursable Work for Others program.

FY 1998 Budget Request

Office of the Secretary

Provides $2.6 million for compensation and benefits, and other services; travel funded at the $0.3 million level. (22 FTEs)

Human Resources and Administration

Provides $47.0 million for compensation and benefits, travel funds of $1.8 million, contractual services funding of $28.6 million, capital equipment funding of $1.4 million and $22.4 million in Working Capital Fund activities. In the FY 1998 request, this office will budget $0.8 million for Scientific and Technical Training and $8.0 million for Corporate Information Management Systems. (635 FTEs)

Chief Financial Officer

Provides $14.6 million for compensation and benefits, travel funds of $0.2 million, and contractual services funding of $7.6 million. (205 FTEs)

Field Management

Provides $4.4 million for compensation and benefits, travel funds of $0.2 million and contractual services funding of $3.6 million. (47 FTEs)

Board of Contract Appeals

Provides $0.5 million for compensation and benefits and $0.2 million for contractual requirements (working capital fund contributions). (5 FTEs).

Congressional, Public and Intergovernmental Affairs

Provides $5.9 million for compensation and benefits, travel funds of $0.1 million, funding for contractual services of $1.9 million, and program support funding of $0.1 million. (66 FTEs)

General Counsel

Provides $16.9 million for compensation and benefits, travel funds of $0.1 million and contractual services funding of $3.9 million. (176 FTEs)

Office of Policy

Provides $11.7 million for compensation and benefits**,** travel funds of $0.5 million, contractual services funding of $3.8 million, program support funding of $2.5 million in support of environmental policy studies, and policy analysis and system studies funding of $2.1 million. (121 FTEs)

Economic Impact and Diversity

Provides $3.6 million for compensation and benefits, travel funds of $0.1 million, contractual services funding of $0.8 million and program support funds of $2.3 million for minority and economic impact assistance activities. (42 FTEs)

Cost of Work for Others

Provides $32.1 million for the cost of products and services provided by field offices and National laboratories for non-DOE users. Work is primarily revenue programs associated with DOE Federal reservations, e.g., timber and water sales, or is reimbursable work for non-Federal governmental entities where advance funding is precluded by law.

Revenues

Revenue estimates associated with the Cost of Work for Others program are $35.5 million. Miscellaneous revenues are estimated at $95.8 million and come from the sale of by-products that have no cost associated with the Departmental Administration appropriation but which offset this appropriation.

FY 1998 Performance Goals and Measures

The main goal of the Departmental Administration appropriation is to support the Department's mission with internal customers (direct programs) as well as external customers including Congress, the Executive Office of the President, taxpayers, and others.

FY 1998 success will be measured by the extent to which the Departmental Administration account:

- Provides a crucial central monitoring function for performance evaluation of Department-wide activities to support the Secretary.
- Insures compliance with laws governing Federal activity as well as specific programmatic activity.
- Protects against fraud, waste, and abuse of Federal funds.
- Provides products and services related to finance and accounting, human resources, administration, legal counsel, and strategic support for the Office of the Secretary.
- Continues to reduce management layers and encourage employee participation in Departmental management.
- Continues efforts to eliminate prescriptive requirements as well as nonessential processes, reports, forms and directives.
- Continues activities to reduce Federal staffing, and office consolidation.
- Continues to work with minority institutions to develop an agency-wide support strategy.
- Continues efforts to ensure a diverse workforce.
- Continues on-going efforts to achieve U.S. goals under the United Nations framework convention on Climate Change.

Departmental Administration
(dollars in millions)

	FY 1997 Estimated Obligations	FY 1998 Request	Difference
Office of the Secretary	$2.8	$2.8	—
General Management			
Personnel Compensation & Benefits	100.7	104.5	+3.8
Severance Costs	7.5	0.0	-7.5
Total, General Management	108.2	104.5	-3.7
Other Expenses	74.9	77.4	+2.5
Program Support	5.1	15.8	+10.7
Total, Administrative Operations	191.0	200.5	+9.5
Cost of Work for Others	26.3	32.1	+5.8
Total Obligations:	217.3	232.6	+15.3
Revenues	-125.4	-131.3	-5.9
Adjustments	-2.3	—	+2.3
Total Appropriation	89.6	101.3	+11.7

Highlights of Program Changes

Departmental Administration requests $101.3 million, an increase of $11.7 million over FY 1997 net appropriation of $89.6 million. However; (see table above) Administrative Operations increase by $9.5 million (5 percent) largely due to an $8.0 million initiative to create a Corporate Management Information System.

Office of Secretary *(FY 1997: $2.8, FY 1998: $2.8)* —

Allowing for the use of prior year unobligated balances in FY 1997, there is no increase in requirements in FY 1998.

General Management *(FY 1997: $108.2, FY 1998: $104.5)* **-$3.7**

Personnel Compensation and Benefits decreases, reflecting the cost of downsizing in FY 1997 (-$5.3) and elimination of separation costs (-$4.1), partially offset by the pay raise (+$4.0), an increase of General Counsel for 11 FTEs (+$1.4), and other (+0.3).

Other Expenses *(FY 1997: $74.9, FY 1998: $77.4)* **+$2.5**

Increase is due to Field Management (+$2.0, use of prior year funds in FY 1997), Policy (+$0.4, working capital fund increases), and Economic Impact and Diversity (+$0.1 for the new Office of Employee Concerns).

Program Support *(FY 1997: $5.1, FY 1998: $15.8)* **+$10.7**

There is a new $8.0 million program for Corporate Management Information Systems. Minority and Economic Diversity (+$0.8) is implementing Executive Order 12900 "Educational Excellence for Hispanic Americans". Policy (+$1.6) is seeking program funds to maintain its readiness for analyzing compelling and emerging National energy issues as well as supporting the Department's strategic planning. Scientific and Technical Training increases $0.3 million.

Cost of Work *(FY 1997: $26.4, FY 1998: $32.1)* **+$5.8**

Increase results from increased State and Federal requirements for biological research from the University of California at the Oakland Operations Office. Note: This increase is offset by the revenues the work will generate.

Revenues *(FY 1997: -$125.4, FY 1998: -$131.3)* **-$5.9**

Revenue increase is consistent with the cost of work increase described above.

Adjustments **-$2.3**

Increase reflects a $1.5 million reprogramming and unobligated balances of $0.9 million used to finance the Office of the Secretary in FY 1997. The bottom line reduction to indicate new budget authority only appears as an increase to the FY 1998 Request.

Office of the Inspector General

Mission

Major statutory responsibilities as stated in section 4 of the Inspector General Act of 1978, as amended, 5 U.S.C. App. 3, are to detect and prevent fraud, abuse and violations of law and to promote economy, efficiency and effectiveness in the programs and operations of the Department of Energy. Section 6006 of the Federal Acquisition Streamlining Act of 1994 requires the Office of the Inspector General (OIG) to investigate certain reprisal complaints of contractor employees.

Program Overview

The OIG's actions in identifying attainable economies and efficiencies in Departmental operations have recently provided a monetary impact of approximately $4.0 million per audit employee per year. In the past few years, several new statutory mandates and additional responsibilities have been placed upon the OIG, including implementation of the Chief Financial Officers Act and the Government Management Reform Act, implementation of Section 6006 of the Federal Acquisition Streamlining Act of 1994 to investigate certain reprisal complaints of contractor employees, and implementation of Public Law (183-329) to fund availability pay for investigative salaries which represents an increase of 25 percent. Resource constraints have required the OIG to redirect its efforts to meet these new requirements.

Budget Overview

The FY 1998 budget request for the Office of the Inspector General focuses resources on implementing the requirements of the Chief Financial Officers (CFO) Act and the Government Management Reform (GMRA) Act. Implementation of the CFO Act requires the submission of financial statements to the Director of the Office of Management and Budget for each Departmental revolving fund and trust fund, as well as activities which performed substantial commercial functions. The GMRA expanded the provisions of the CFO Act by requiring the OIG to audit financial statements covering all accounts and associated activities of the Department and submit them to the Office of Management and Budget annually. Implementation of the requirements of the GMRA has lead to a reprioritization of OIG's resources to staff for the organization, planning and training associated with this effort.

	FY 1996 Comparable Appropriation	FY 1997 Comparable Appropriation	FY 1998 Request	FY 1997 vs. FY 1998	
Office Of Inspector General					
Office of Inspector General	28,461	24,750	29,499	4,749	19.2%
Use of prior year balances	-1,915	-897	——	897	100.0%
Total, Office Of Inspector General	26,546	23,853	29,499	5,646	23.7%

FY 1998 Budget Request

The FY 1998 budget request for the OIG is $29.5 million for the salaries, benefits, travel and support services associated with 290 FTEs.

Major FY 1998 activities include: audits in the following areas; CFO and GMRA requirements in support of rendering an opinion on the Departmental financial statement; Departmental efforts at workforce restructuring and economic development; environmental programs; implementation of performance based contracting methods; realignment initiatives; investigations of alleged waste, fraud and abuse, focusing on violations of Federal statutes; administrative allegation inspections, focusing on waste and mismanagement; task forces to investigate DOE excess property and grant programs; referral of Hotline allegations to DOE management; and inquiries to resolve allegations of whistle blower reprisals against contractor employees.

FY 1998 Performance Goals and Measures

Conduct statutorily required audits which enable the public to rely on DOE's financial and management systems.

FY 1998 success will be measured in part by:

- Completing required financial statement audits by designated due dates in the law.
- Rendering an opinion annually on the Department's consolidated financial statements.
- Completing at least 60 percent of audits planned for the year and achieving 85 percent acceptance/adoption rate on recommendations.

Conduct performance reviews of Department operations which promote the efficient and effective accomplishment of the Department's programs.

FY 1998 success will be measured in part by:

- Completing reviews on key programs identifying areas with weaknesses or problems where resources are at risk.
- DOE managers accepting/adopting 85 percent of recommendations.

Conduct investigations to enhance the Department's credibility by aggressively pursuing fraud, waste, and abuse, and reporting on those engaged in such practices.

FY 1998 success will be measured in part by:

- Obtaining acceptance of 75 percent of the cases presented for prosecution, thus permitting prosecutors to pursue maximum monetary recovery from, and punishment of, wrongdoers.

Conduct inquiries which assist the Department in fostering public confidence in the Department's integrity, commitment to fairness, and willingness to take corrective action.

FY 1998 success will be measured in part by:

- DOE managers accepting/adopting 85 percent of the recommendations made in allegation-based inspection reports, allowing them to take corrective, cost saving, recoupment or disciplinary action(s).

Highlights of Program Changes ($ in millions)

The FY 1998 increase of $5.6 is needed to allow the OIG to continue at its FY 1997 level of effort. This increase is attributable to the fact that in FY 1997 the OIG's incurred obligations are expected to increase to approximately $28.6/year, while appropriations have steadily decreased ($26.5 in FY 1995, $24.9 in FY 1996 and $23.9 in FY 1997) by drawing down on prior year balances. These balances are no longer available. +$5.6

Power Marketing Administrations

Mission

The Power Marketing Administrations (PMAs) market electricity generated primarily by Federal hydropower projects. Preference for the sale of power is given to public bodies and cooperatives. Revenues from selling power and transmission services of the five PMAs are used to repay to the U.S. Treasury annual operation and maintenance costs, repay the capital investments with interest, and assist capital repayment of other features of certain projects.

Program Overview

Alaska Power Administration

The Alaska Power Administration (APA) owns, operates, maintains, and markets power from the 78 megawatt Snettisham Project near Juneau and the 30 megawatt Eklutna Project near Anchorage to four Alaskan utilities, providing approximately 5 percent of Anchorage's and 80 percent of Juneau's power requirements. Public Law 104-58 authorizes and directs the Secretary of Energy to sell the assets of APA in accordance with previously negotiated purchase agreements and to terminate the agency. The Eklutna Project will be sold to the three current power customers, Anchorage Municipal Light and Power, Chugach Electric Association Inc., and Matanuska Electric Association, Inc. The Snettisham Project will be sold to an agency of the State of Alaska. Sale of both Projects is expected to be completed by November 28, 1997. However, should the State of Alaska experience delays in securing financing for the Snettisham project, sale of this project could be delayed until August 20, 1998. A total of $85.0 million is expected to be realized from the sale of APA assets.

Southeastern Power Administration

The Southeastern Power Administration sells wholesale power generated at 23 Federal hydroelectric generating plants in eleven southeastern States primarily to publicly and cooperatively owned electric distribution utilities. Since Southeastern does not own or operate any transmission facilities, power is delivered by utilizing the transmission systems of the electric utilities in the area. This is accomplished through wheeling agreements with the region's large private utilities with transmission lines connected to the projects, to provide firm power to Southeastern's customers. In FY 1998, Southwestern proposes to utilize $20.0 million in preference customer advances to fund nearly half of its purchase power and wheeling program, whereby preference customers will pay directly for as many transmission and ancillary services as possible.

Southwestern Power Administration

The Southwestern Power Administration operates within a six-State area as a marketing agent for hydroelectric power produced at 24 U.S. Army Corps of Engineers multipurpose projects and sells power at wholesale rates primarily to publicly and cooperatively owned electric

utilities. To integrate the operation of the hydroelectric generating plants and to transmit power from the dams to its customers, Southwestern maintains 2,225 kilometers (1,380 miles) of high-voltage transmission lines, 24 substations, and 46 microwave and VHF radio sites.

Western Area Power Administration

The Western Area Power Administration markets and provides transmission of Federal and non-Federal electric power in 15 central and western States encompassing about 40 percent of the total area of the contiguous United States from 55 Federally owned hydropower plants operated primarily by the Bureau of Reclamation, U.S. Army Corps of Engineers, and the International Boundary and Water Commission. Western also markets the United States' entitlement from the Navajo coal-fired power plant near Page, Arizona. These activities are accomplished through a combination of appropriated funds and revenue collections. Western maintains an existing infrastructure of over 16,850 circuit miles of transmission line and 258 substations. To firm up Federal hydropower supplies needed to meet Western's contractual obligations, Western purchases power from others and transmission services when a third party's transmission lines are needed to deliver Federal power. Western also conducts work for other Federal entities under reimbursable agreements and for non-Federal entities under the Contributed Funds Act.

Bonneville Power Administration

The Bonneville Power Administration provides electric power, transmission and energy services to a 300,000 square mile service area in the Pacific Northwest. Bonneville sells at wholesale the power produced at a total of 29 Federal projects, operated by the Corps of Engineer and Bureau of Reclamation and from certain non-Federal hydro and thermal generating facilities. Bonneville provides about 80 percent of the Pacific Northwest region's electric power transmission capacity utilizing over 23,800 circuit kilometers (about 14,800 circuit miles) of transmission lines and about 400 substations. Operating on a self financed revolving fund basis, Bonneville does not require appropriations to finance its day to day operations. It does, however, require borrowing authority for its capital investment activities. Bonneville funds the expense portion of its budget and repays the Federal investment with revenues from electric rates.

Budget Overview

Overall, the budget requests for the Power Marketing Administrations, excluding Bonneville increased by $3.1 million in FY 1998. This increase is comprised of a total decrease of $44.0 million in the funding levels for the Western Area Power Administration (-$28.5 million), the Southeastern Power Administration (-$11.2 million), the Alaska Power Administration (-$3.0 million) and the Southwestern Power Administration (-$1.3 million), offset by a $47.2 million decrease in prior year balances available to offset FY 1998 requirements, resulting in a net increase of $3.1 million. Bonneville Power Administration proposes to obligate $253.0 million of its borrowing authority in fiscal year 1998, and will have net outlays of -$66.0 million.

	FY 1996 Comparable Appropriation	FY 1997 Comparable Appropriation	FY 1998 Request	FY 1997 vs. FY 1998	
Power Marketing Administrations:					
Alaska Power Administration					
Alaska power administration	4,245	4,000	1,000	-3,000	-75.0%
Transition and termination	5,500	——	——	——	——
Total, Alaska Power Administration	9,745	4,000	1,000	-3,000	-75.0%
Southeastern power administration	29,851	27,445	16,222	-11,223	-40.9%
Southwestern power administration	30,702	27,804	26,500	-1,304	-4.7%
Western Area Power Administration					
Western area power administration	276,282	248,691	229,964	-18,727	-7.5%
Transfer of current authority from DOI	4,556	3,774	——	-3,774	-100.0%
Total, Western Area Power Administration	280,838	252,465	229,964	-22,501	-8.9%
Falcon & Amistad Operating & Maintenance Fund	1,000	970	1,065	95	9.8%
Colorado River Basin Power Marketing Fund					
Spending authority from offsetting collections	123,276	120,431	124,786	4,355	3.6%
Offsetting collections	-123,276	-130,431	-140,884	-10,453	-8.0%
Total, Colorado River Basin	——	-10,000	-16,098	-6,098	-61.0%
Subtotal, Power Marketing Administrations:	352,136	302,684	258,653	-44,031	-14.5%
Use of prior year balances	-35,210	-68,789	-21,630	47,159	68.6%
Total, Power Marketing Administrations	316,926	233,895	237,023	3,128	1.3%
Bonneville Power Administration (non-add)					
Budget authority	*(-194,000)*	*(-14,000)*	*(-41,000)*	*(-27,000)*	*(-192.9%)*
Capital obligations	*(161,000)*	*(277,000)*	*(253,000)*	*(-24,000)*	*(-8.7%)*

The FY 1998 budget requests for the Power Marketing Administrations continue their commitments of service to their customers at the lowest possible rates while maintaining repayment to the Treasury. The Program Direction decision unit includes the majority of funding for the Alaska, Southwestern and Western Area Power Administrations. Although Southeastern Power Administration's mission activities are contained in the Program Direction decision unit, over 90 percent of this funding is included in the Purchase Power and Wheeling decision unit. With the capital side of the Bonneville Power Administration, Bonneville meets its capital investment requirements for transmission, fish and wildlife, marketing, conservation and production, associated projects and capital equipment. Bonneville's fish and wildlife capital program implements the Administration's agreement on Bonneville Power Administration fish and wildlife support.

The FY 1998 budget assumes that the Bonneville, Southeastern, Southwestern and Western Area Power Administrations begin to cover their share of the unfunded liability of the Civil Service Retirement (CSRS) and Disability Fund, the Employees' Health Benefits Fund and the Employees' Life Insurance Fund. For Bonneville, the unfunded liability is the difference in the current cost of Federal Columbia River Power System (FCRPS) employees' retirement benefits and the current payments, the sum of 1) 7 percent withheld from current employees salaries, and 2) an additional 7 percent of wages that Bonneville, on behalf of the FCRPS must already contribute into the Disability Fund. Bonneville's CSRS full cost recovery will be

phased in over a ten-year period of time given that wholesale power and transmission rates for Bonneville are contractually frozen until the end of FY 2001 in order to meet competitive market pressures.

FY 1998 Budget Request

Alaska Power Administration

The Alaska Power Administration (APA) budget provides $1.0 million for Program Direction to support 11 FTEs to continue remaining operations and maintenance activities at Alaska Power Administration's two projects, the 78 megawatt Snettisham Project near Juneau and the 30 megawatt Eklutna Project near Anchorage until they are transferred to non-Federal ownership. Preparation of both projects for transfer to non-Federal ownership, including settlement of all outstanding land, dam safety, historic preservation and environmental issues will continue. Employee training, career counseling, assistance in placement, severance, relocation, and retention will be provided as appropriate. Both of these activities will be conducted utilizing funds appropriated in FY 1996 for APA transition and termination.

Southeastern Power Administration

The Southeastern Power Administration (SEPA) FY 1998 total program level is $36.2 million. Of this amount, $16.2 million is new budget authority and $20.0 million is customer advances. The vast majority of this total funding level provides payment for purchases of pumping energy and wheeling charges which are required for the delivery of power to customers, the remaining funds program direction requirements for 41 FTEs. Customers advances will only be utilized to pay for transmission wheeling and ancillary services needed to deliver power to preference customers. None of these advances will be used for purchase power expenses. These advances will be required for one year because SEPA will begin a public process to modify its existing power marketing policy that provides for transmission from the power plant to the customer system. The policy change will allow customers to directly pay for transmission from the project to the customer system.

Southwestern Power Administration

The Southwestern Power Administration FY 1998 funding level is $26.5 million. The majority of funding is dedicated to program direction for 189 FTEs to conduct all activities connected with the marketing and delivery of Federally generated hydroelectric power to customers; transmission line, substation and communication system maintenance; and for equipment replacements at facilities associated with the transmission system.

Western Area Power Administration

The Western Area Power Administration FY 1998 Construction, Rehabilitation, Operation and Maintenance program is funded at a total of $230.0 million. Of this amount, $208.3 million is new budget authority and $21.6 million is use of prior year balances. Over half of the total funding, $106.2 million, covers program direction for 1,168 FTEs who perform operations, maintenance and construction activities associated with Western's transmission system and other power marketing activities. Another significant portion of Western's funding, $54.9 million, provides for the purchase power and wheeling program which obtains

electrical resources and transmission services needed to firm up Federal hydroelectric power supplies to meet Western's contractual obligations.

The remaining funding includes: $39.2 million for Western's operation and maintenance program which provides materials, supplies, equipment, and technical services used in direct support of the operation and maintenance of the interconnected power system; $24.2 million for construction and rehabilitation activities which include replacements and upgrades of Western's existing infrastructure; and $5.4 million is included for Western's contribution to the Utah Mitigation, Reclamation and Conservation account. A total of $1.0 million is requested for the operation and maintenance of the hydroelectric facilities at the Falcon and Amistad dams. Operation of the Colorado River Basins Power Marketing program on a revolving fund basis continues at an estimated FY 1998 level of $124.8 million in spending authority from offsetting collections with a level of 161 FTEs.

Bonneville Power Administration

In FY 1998, the Bonneville Power Administration budget includes $253.0 million in borrowing authority for capital investments. These investments provide electric utility and general plant associated with the Federal Columbia River Power System's transmission services, capital equipment, hydroelectric projects, conservation and capital investments in environment, fish and wildlife. Two thirds of the capital investments in FY 1998, $171.0 million are for the transmission services element to provide for additions, upgrades and replacements to the Federal transmission system. A total of $33.0 million is included for the conservation programs. Funding of $27.0 million is allocated to resource protection, enhancement and mitigation of Columbia River Basin fish and wildlife losses attributed to the development and operation of Federal hydroelectric projects on the Columbia River and its tributaries, and for pollution prevention and abatement activities in compliance with environmental laws and regulations and to mitigate environmental risks associated with operation of the power system.

Bonneville's FY 1998 budget has been prepared on the basis of its three major areas of activity; power, transmission and conservation and energy efficiency services. This new structure supports Bonneville's reorganization undertaken to become more competitive in the rapid restructuring of the deregulated wholesale electric energy market. This industry deregulation stems largely from the 1992 Energy Policy Act and ensuing Federal Energy Regulatory Commission (FERC) orders, (FERC orders 888 and 889) requiring separation of utilities' power and transmission functions. As a Federal agency, Bonneville is not bound by law to comply with the orders, but chose to comply with the FERC orders because it views compliance as essential to successfully compete in the electric power market of the future. Further, Bonneville supports DOE's October 1995 "Power Marketing Administration Open Access Policy".

Bonneville's budget also reflects the utility business and public benefits forecast in Bonneville's 1996 rate case filed with FERC which became effective October 1, 1996. Bonneville's budget estimate will have to change to enable Bonneville to meet its statutory responsibilities and fulfill its legislative and executive obligations as the electric utility industry evolves. This changing environment includes the final recommendations of the Comprehensive Review of the Northwest Energy System (the Regional Review) which was convened on January 4, 1996, by the governors of Idaho, Montana, Oregon, and Washington. The Regional Review was conducted by a special independent steering committee. It served as a forum for discussion about the restructuring of the electric utility industry and what it will

mean to the Pacific Northwest. The governors received the Regional Review proposal on December 12, 1996. The proposal recommends legislatively splitting Bonneville into two agencies. The report recognizes Bonneville's need to recover costs, but no process is outlined. The review does not address fish and wildlife funding after 2001 or river governance. The governors appointed a transition board to prepare a strategic plan by February, 1997. The strategy will be on implementing the regional review's report.

FY 1998 Performance Goals and Measures

Alaska Power Administration

Successfully complete the legislative mandate of the Alaska Power Administration Asset Sale and Termination Act in the most effective and efficient manner possible, balancing the interests of Alaska ratepayers and the Federal taxpayers.

FY 1998 success will be measured by:

- The extent to which the Alaska Power Administration Asset Sale and Termination Act has been successfully implemented.

Southeastern Power Administration

Encourage widespread use of available Federal power giving preference in the sale of power to public bodies and cooperatives.

FY 1998 success will be measured by:

- The percent of power sold is 99 percent or more.

Make power available at the lowest possible rates to consumers consistent with sound business principles while repaying the Federal investment in a timely manner.

FY 1998 success will be measured by:

- Percent variance of actual from planned principal payments to Federal investment is zero.

Southwestern Power Administration

Customer satisfaction as measured by competitive power sale rates and improved customer service.

FY 1998 success will be measured by:

- Reduction of 10 percent in indirect and overhead expenses from prior year funds.
- Uncosted obligations will not exceed 35 percent of annual costs.

Reliability as measured by increased reliability of the integrated power system.

FY 1998 success will be measured by:

- Not more than 150 minutes total outage per year for 95 percent of points of delivery.
- Hourly inadvertent power flow is less than 14 MW for 90 percent of all hours delivered.

Western Area Power Administration

Develop and achieve operation of a reliable, low-cost, environmentally-sound power system which facilitates competitive, efficient and reliable power deliveries. Maintain the health and safety of all employees. Make full and timely repayment to the U.S. Treasury.

FY 1998 success will be measured by:

- Operating Effectiveness: The area control percentage exceeds the North American Reliability Council performance standard of 91.9 percent.
- Cost Growth: The change in actual regular operation and maintenance obligations from one year to the next is no greater that the annual rate of inflation for the same period.
- Safety: Western's lost workday frequency rate is lower than the average for the electric utility industry as reported by the National Safety Council.
- Principal repayment to the U.S. Treasury in any given fiscal year is equal to, or greater than, the planned principal repayment.

Bonneville Power Administration

Bonneville's strategic business objectives and their associated performance measures are currently being reviewed and may be revised consistent with Bonneville's long-term business objectives.

Achieve high and continually improving customer satisfaction.

FY 1998 success will be measured by:

- Improving customer overall satisfaction as measured by customer surveys.

Increase the value of Bonneville's business and share the expanding benefits.

FY 1998 success will be measured in part by:

- Value of public agency utility contracts measured by value of signed contracts.

Be the lowest-cost producer of power and transmission services.

FY 1998 success will be measured by:

- Business line as measured against targets.

Achieve and maintain financial integrity.

FY 1998 success will be measured by:

- Progress toward targeted financial reserves.

Keep the power system safe and reliable.

FY 1998 success will be measured in part by:

- Recordable injury below industry average.

Invest in environmental results to sustain competitiveness and deliver Federal benefits.

FY 1998 success will be measured by:

- Progress toward enhancement of the region's fish and wildlife resources while reducing customers's concerns about uncertainty in BPA's obligations for fish and wildlife costs.

Highlights of Program Changes ($ in millions)

Alaska Power Administration -$3.0

Program direction decreases $3.0 million from $4.0 million to $1.0 million the minimum level necessary to complete remaining operations and maintenance requirements in 1998, due to the pending sale of APA assets.

Southeastern Power Administration -$11.2

Program direction increases $0.3 million from $4.0 million to $4.3 million due to the cost of living raise and the purchase of ADP equipment/software, and inflation increases, offset by a $11.5 million decrease in purchase power and wheeling comprised of an increase of $8.4 million in the total program ($23.4 FY 1997 to $31.9 FY 1998, due to increased transmission charges assessed to SEPA and the need to purchase power to operate the Russell project) offset by a $20.0 million increase in the use of alternative financing in FY 1998.

Southwestern Power Administration -$1.3

Operations and maintenance deceases $0.4 million from $2.8 million to $2.4 million due to a decrease in service contracts due to budget priorities. Purchase Power and Wheeling decreases $0.9 million from $1.0 million to $0.1 million due to new contractual arrangements which require customers who are not directly connected to SWPA's transmission system to provide for their own transmission needs. Construction increases $0.6 million from $6.1 million to $6.7 million to provide for the replacement of aging vehicles. Program Direction decreases a total of $0.6 million, $17.9 million to $17.3 million comprised of a reduction of $1.5 million in salaries and benefits and travel due to FTE reductions and decreases in relocation expenses, offset by an increase of $0.9 million in other related expenses for the acquisition of a personnel security card system and additional communication equipment and related training needed for the Supervisory Control and Data Acquisition System.

Western Area Power Administration -$22.5

Construction, Rehabilitation Operation and Maintenance Program: Program Direction decreases $2.8 million from $109.0 million to $106.2 million due to a reduction of $5.0 million in support services consistent with Strategic Alignment Initiative goals offset by an increase of $2.2 million in other related expenses and an increase in salaries and benefits for the government-wide pay raise. Operation and Maintenance increases $5.2 million from $34.0 million to $39.2 million primarily due to an increase in the purchases of circuit breakers, which must be replaced in order to maintain system reliability, an increase in the basic cost of supplies and materials due to inflation, and an increase in the replacement of radios and associated equipment needed to meet newly legislated FCC and NTIA requirements. Purchase Power and Wheeling decreases $19.3 million from $74.2 million to $54.9 million due primarily to reduced power purchases for the Central Valley Project due to the competitive pressures in the California energy market and an expansion of alternative financing in the Pick-Sloan Missouri Basin Program. Construction decreases $5.6 million

from $29.8 million to $24.2 million due to continuation of Western's aggressive reduction in its capital investments initiated in order for it to remain competitive in the rapidly changing electric utility industry.

Colorado River Basins Power Marketing Fund -$6.1

A $10.5 million increase in offsetting collections from $130.4 million to $140.9 million is offset by a $4.4 million program increase. The program increase from $91.8 million to $99.9 million is comprised of a $8.1 million increase in power purchases required to meet contractual loads, caused by steady water flows through the Glen Canyon Dam. These flows have been mandated to protect endangered fish, offset by a $3.7 million decrease in program direction from $28.6 million to $24.9 million which is attributed to Western's transformation process which has resulted in a reduction of 38 FTEs, with corresponding reductions in the level of support services and other related expenses.

Bonneville Power Administration -$24.0

Power Business Line program activity decreases $7.0 million from $20.0 million to $13.0 million due to the completion of additional improvements and replacements of existing U.S. Bureau of Reclamation and Corps of Engineers hydroelectric projects. Transmission Services decreases $4.0 million from $175.0 million to $171.0 million due to the implementation of reliability centered maintenance and replacement practices which dictate that non critical transmission equipment will only be replaced at failure. Conservation and Energy Efficiency activities decrease $14.0 million from $47.0 million to $33.0 million due to the closeout of conservation acquisition programs consistent with BPA's new approach to developing conservation resources though the use of non-government funds.

Federal Energy Regulatory Commission

Mission

The Commission is responsible for overseeing the operations of key parts of America's energy industries: electric utilities, hydropower facilities, and natural gas and oil pipelines. The Commission seeks to ensure that consumers receive adequate, reliable supplies of energy at the lowest possible price, and to provide energy suppliers and transporters a just and reasonable return on capital investment and the opportunity to adjust to rapidly changing market conditions.

Program Overview

In FY 1998, the Commission will maintain its focus and efforts on environmental issues and compliance in all program areas. In addition, the Commission will continue to protect the public by encouraging competitive markets where appropriate, while maintaining more traditional forms of regulation where competitive markets do not exist or market forces do not work to protect the public interest. This will be accomplished through on-going implementation of the Energy Policy Act of 1992 and other authority under the Federal Power Act, including reducing barriers to competition and generation in the electric power industry. Since passage of the Act, the Commission has aggressively pursued policies designed to foster competition in wholesale electric power markets. In April 1996, the Commission issued Order No. 888, which requires all public utilities that own, control, or operate electric transmission facilities to provide nondiscriminatory open access transmission services and allows utilities to seek full recovery of stranded costs. A companion order, Order No. 889, requires nondiscriminatory access to information about electric transmission facilities. With implementation of these initiatives, the Nation will see the most sweeping transformation in the electric power industry since the passage of the Federal Power Act in 1935.

Budget Overview

The Commission's budget request for FY 1998 is $167.6 million, about a 7 percent increase over total FY 1997 funding which included the use of prior years' unobligated balances. This request funds 1,377 FTEs, an increase of 20 over FY 1997, all of which are dedicated to the electric power program. The Commission will recover the full cost of its operations through a system of annual charges and fees, resulting in a net appropriation of $0.0.

	FY 1996 Comparable Appropriation	FY 1997 Comparable Appropriation	FY 1998 Request	FY 1997 vs. FY 1998	
Federal Energy Regulatory Commission					
Federal Energy Regulatory Commission	159,290	156,290	167,577	11,287	7.2%
Use of prior year balances (FERC)	-28,000	-10,000	——	10,000	100.0%
FERC Offsetting Collections	-131,290	-146,290	-167,577	-21,287	-14.6%
Total, Federal Energy Regulatory Commission	——	——	——	——	——
Fees & recoveries in excess of appropriation	-49,980	-31,263	-22,000	9,263	29.6%

Highlights of Program Changes ($ in millions)

The FY 1998 budget request reflects the Commission's changing regulatory priorities, resulting from three factors: 1) the need to process the huge surge in workload and respond to the changing needs of the electric power industry as we continue to implement the restructuring of the industry and address major issues such as open-access and stranded costs; 2) the completion of nearly all relicensing work related to the 157 licenses that expired in 1993; and 3) the successful implementation and ongoing industry transition under Order No. 636, which restructured the natural gas pipeline industry.

Nuclear Waste Disposal Fund

Mission

The mission of the Office of Civilian Radioactive Waste Management is to manage and dispose of the Nation's spent nuclear fuel and high-level radioactive waste. The office provides leadership in developing and implementing strategies to accomplish this mission that assure public and worker health and safety, protect the environment, merit public confidence, and are economically viable.

Program Overview

The office was established by the Nuclear Waste Policy Act of 1982 to dispose of spent nuclear fuel and high-level radioactive waste from commercial and defense activities in a permanent geologic repository. The Nuclear Waste Policy Amendments Act of 1987 designated the Yucca Mountain, Nevada, site for detailed scientific investigation to evaluate the site's suitability for a geologic repository. Activities performed by this office include core scientific work and excavation of the exploratory tunnel at Yucca Mountain, waste package and repository design, and planning for the transfer and transportation of waste to the Federal Government from the owners and generators of spent fuel and high-level radioactive waste.

In FY 1996, the Energy and Water Appropriation Act provided a total of $400 million for the program. Of this amount, $85 million was withheld and designated to be used only for the development of an interim storage facility and only upon enactment of new statutory authority. As a result, the program was effectively reduced to a $315 million funding level, or one-half of the $630 million budget request to maintain the existing program approach. The program was restructured based on the significant funding reduction and the exiting program approach was no longer sustainable.

The Program revised and reissued the Program Plan with major emphasis on core scientific activities at Yucca Mountain. The draft revised Program Plan defines three near-term objectives that will maintain the momentum toward a National decision on the geologic disposal option: 1) update the regulatory framework in FY 1997 for evaluating the suitability of Yucca Mountain; 2) complete the viability assessment of Yucca Mountain by September 1998; 3) recommend the repository site to the President in 2001 if the site is suitable, and submit a license application to the Nuclear Regulatory Commission in 2002.

The viability assessment is a major milestone to address the unresolved technical questions regarding the conceptual design of the repository and its expected performance in the geological setting. The viability assessment's components are a set of deliverables that are consistent with the guidance in the FY 1997 Energy and Water Development Appropriations Conference report. The viability assessment shall include: (1) the preliminary design concept for the critical elements for the repository and waste package; (2) a total system performance assessment, based upon the design concept and the scientific data and analysis available by September 30, 1998, describing the probable behavior of the repository in the Yucca Mountain geological setting relative to the overall system performance standards; (3) a plan and cost estimate for the remaining work required to complete a license application; and (4) an

estimate of the costs to construct and operate the repository in accordance with the design concept.

Budget Overview

The Civilian Radioactive Waste Management Program has been funded through two appropriations: the Nuclear Waste Disposal Fund, and the Defense Nuclear Waste Disposal appropriation. The Nuclear Waste Disposal Fund is financed by fees from the ratepayers of nuclear utilities. The Defense contribution is a general fund appropriation to offset the costs of disposing of the Department's high-level waste from the nuclear weapons program.

	FY 1996 Appropriation	FY 1997 Appropriation	FY 1998 Request	FY 1997 vs. FY 1998	
Nuclear Waste Fund — Financing					
Nuclear Waste Disposal Fund	151,067	182,000	190,000	8,000	4.4%
Defense nuclear waste disposal	248,400	200,000	190,000	-10,000	-5.0%
Total, Nuclear Waste Fund	399,467	382,000	380,000	-2,000	-0.5%
Nuclear Waste Fund — Activities					
Yucca mountain site characterization	250,000	324,964	325,000	36	0.0%
Waste acceptance, storage and transportation	13,600	9,936	9,936	——	——
Program Integration	22,105	17,801	17,801	——	——
Program Direction	28,762	29,299	27,263	-2,036	-6.9%
Subtotal, Nuclear Waste Fund	314,467	382,000	380,000	-2,000	-0.5%
Congressional Reserve	85,000	——	——	——	——
Total, Nuclear Waste Fund	399,467	382,000	380,000	-2,000	-0.5%

The FY 1997 appropriations provide for a total of $382 million funding level. Of the $382 million appropriated, $325.0 million is allocated to Yucca Mountain Site Characterization efforts. The FY 1998 budget request is for a total of $380 million of which $190 million is to be derived from the Nuclear Waste Disposal Fund, and $190 million is to be derived from Defense Nuclear Waste Disposal in FY 1998 and in FY 1999.

The FY 1998 funding level provides for the completion of the Viability Assessment by September 30, 1998, and the continuation of waste acceptance, storage and transportation initiatives. The program is continuing licensing activities with the Nuclear Regulatory Commission and Environmental Protection Agency. Upon the completion of the viability assessment, if the Yucca Mountain site is determined to be a viable option, the program will prepare the additional information required for the Secretary of Energy's site recommendation to the President and the license application to the Nuclear Regulatory Commission.

FY 1998 Budget Request

The FY 1998 request provides $325.0 million to continue characterization of the Yucca Mountain candidate repository site. The funding level will allow the completion of the viability assessment and ultimately the determination of the Yucca Mountain site as a geologic repository. The completion of the underground excavation and tunneling of the Exploratory Studies Facility (ESF), as well as the on-going underground testing in the ESF. In addition, the request provides $9.9 million for waste acceptance, storage and transportation activities. This includes continued advancements for a market-driven initiative to create a National transportation capability to remove spent nuclear fuel from reactor sites and plans for awarding contracts to the private sector for canister, transport cask and storage module production, and waste acceptance and transportation services. The request also provides $17.8 million for program integration activities, which include quality assurance, systems and regulatory integration, strategic planning, and program and information management. In addition, the request provides $27.3 million for program direction activities. Activities include funding for Federal salaries, benefits, travel, and other related services.

FY 1998 Performance Goals and Measures

Refocus the Civilian Radioactive Waste Management program to provide meaningful deliverables that are consistent with reduced funding and revised policies.

FY 1998 success will be measured by:

- Complete an assessment of the viability of licensing and constructing a geologic repository at the Yucca Mountain site will be by:
  - Design and operational concept of the repository
  - An assessment of the performance of that concept in the geologic setting
  - A plan and cost estimate to construct and operate the repository
  - A plan and an estimate of the costs to complete a license application

Highlights of Program Changes ($ in millions)

Civilian Radioactive Waste Management -$2.0

Program Direction funding level in decreases from $29.3 in FY 1997 to $27.3 in FY 1998, as a result of the recommendation by the FY 1997 Energy & Water Development Appropriations conference report to reduce costs that are not directly associated with site characterization and interim storage activities by realigning its organizational structure to reduce management and operating costs.

Fossil Energy Research and Development

Mission

The mission of the Fossil Energy (FE) Research and Development (R&D) program is to stimulate sustainable development and utilization of the Nation's fossil fuel resources and technologies to assure an ample, secure, clean and low cost domestic supply of energy. This mission will be executed in a way that assures U.S. global leadership in fossil energy technology; protects the local, regional and global environment; merits public trust; promotes public-private partnerships; and contributes to a stronger economy.

Program Overview

The U.S. is reliant on fossil fuels for about 85 percent of the energy it consumes and is expected to remain dependent on fossil fuels for the next twenty years. A key goal of the Department's fossil energy activities is to ensure that economic benefits from low-priced fossil fuels, a strong domestic industry, and export-related jobs do not come with unacceptable environmental costs or energy security risks.

The programs in this budget include a portfolio of activities designed to accomplish this goal. Environmental concerns pose threats to the continued development and utilization of all fossil fuels.

For electric power generation there are multiple issues related to environmental protection. Post-2000 sulfur dioxide ($S0_2$) emissions will be capped; permissible nitrogen oxide (NO_X) emissions will be in the single digit parts per million levels for much of the country; allowable particulate emissions may be further constrained due to air toxic and other health considerations; land constraints will increase pressure to reduce disposal of solid residue resultant from power generation systems; and international pressure to reduce greenhouse gas emissions, principally carbon dioxide (CO_2), will likely increase. R&D addressing these concerns is funded under the Gas and Coal Programs, and includes R&D on: clean power systems that will achieve 60 percent or greater efficiency and reduce the cost of electricity by 10-20 percent; and coal systems that can reduce regulated emissions to one-tenth of current requirements and CO_2 emissions by over 40 percent.

The Natural Gas Program also includes R&D in the areas of exploration, production, processing, storage and environment, to help ensure that long-term supply of our cleanest domestic fossil fuel is adequate to meet the increased demand for power and other applications over the next two decades. The challenge faced is development of the technology needed to produce the increasing amounts of gas to be drawn from parts of a vast domestic resource base that is not currently economical to recover due to the geological setting, quality of the gas, or location relative to infrastructure.

Energy security "threats" focus on the availability of reliable oil supplies. The U.S. currently depends on imports for about one-half of its oil supplies, and by 2015 this dependence is projected to increase to over 60 percent, with incremental supplies increasingly centered in historically unstable regions of the world. In the meantime, U.S. oil production is declining as the domestic resource matures, and marginally economic wells with high remaining resource potential are being abandoned. The program is also being driven by industry need for

advanced technologies to locate and produce the deeper, tighter and more complex reservoirs still to be developed in the U.S. The Oil Program addresses these problems through R&D in the areas of exploration, production, processing, and environment that focus on increasing the recovery from discovered reservoirs, reduce the risk of finding new reservoirs, and minimize environmental impacts. It is estimated that these activities can lead to increased U.S. production of one million barrels of oil per day by 2015. R&D is also carried out on technologies to convert gas and coal to cleaner burning liquid fuels which offers the potential for producing significant quantities of premium transportation fuels (e.g., Fisher-Tropsch diesel high cetane, ultra-low sulfur) in the post-2000 time frame.

The Oil and Gas environmental Research and Analysis Program is working with industry to help ensure that environmental protection approaches make technical, environmental and economic sense by developing lower-cost compliance technologies and furthering risk-based, streamlined regulations based on credible scientific information. The overall program objective is to reduce cumulative industry compliance costs by $16.0 billion by 2010.

The Materials Partnership program was transferred to the Department of Energy in Fiscal Year 1996 from the Bureau of Mines. This program seeks to determine the factors that limit service life of materials in industrial, structural, or engineering applications and to provide solutions to service-life problems through new materials technology. The program seeks to establish and maintain mutually beneficial partnerships with industry and other agencies to share the costs, tasks and National benefits of research.

Other support activities for the Fossil Energy Research and Development appropriation include, Program Direction, Plant and Capital Equipment, Environmental Restoration, Cooperative Research, and the Fuels Program.

Budget Overview

The FY 1998 request for Fossil Energy Research and Development is $346.4 million, which is a 5 percent reduction from the FY 1997 level and a 20 percent reduction from FY 1996. In FY 1998, many of DOE's gas and coal-fueled power systems are entering their final phase of development. Evidence of near-term pay off will be seen in the availability of a number of attractive systems in the 2000 time frame. The proposed budget retains a commitment to technology advancement and, in most cases, is highly leveraged by joint partnerships with the private sector, focused on advanced, high payoff R&D.

	FY 1996 Comparable Appropriation	FY 1997 Comparable Appropriation	FY 1998 Request	FY 1997 vs. FY 1998	
Fossil Energy Research and Development					
Coal					
Advanced clean fuels research	19,310	16,154	15,844	-310	-1.9%
Advanced clean/efficient power systems	79,244	69,269	66,340	-2,929	-4.2%
Advanced research and technology development	21,072	17,623	19,729	2,106	12.0%
Transfer to Cooperative R&D (TBD)	——	——	-1,864	-1,864	——
Total, Coal	119,626	103,046	100,049	-2,997	-2.9%
Petroleum					
Oil technology	54,935	45,937	52,169	6,232	13.6%
Gas					
Natural gas research	58,553	70,214	56,692	-13,522	-19.3%
Fuel cells	51,237	50,117	46,291	-3,826	-7.6%
Total, Gas	109,790	120,331	102,983	-17,348	-14.4%
Program direction and management support					
Headquarters program direction	15,993	14,396	14,659	263	1.8%
ETC program direction	55,276	54,314	48,107	-6,207	-11.4%
Total, Program direction & management support	71,269	68,710	62,766	-5,944	-8.7%
Plant and capital equipment	4,005	2,000	2,532	532	26.6%
Fossil energy environmental restoration	14,554	13,027	12,935	-92	-0.7%
Cooperative research and development	6,152	5,566	5,836	270	4.9%
Fuels conversion, natural gas and electricity	2,687	2,188	2,173	-15	-0.7%
Mining	44,109	5,000	4,965	-35	-0.7%
Subtotal, Fossil Energy Research & Development	427,127	365,805	346,408	-19,397	-5.3%
Use of prior year balances	-7,554	-1,101	——	1,101	100.0%
Total, Fossil Research and Development	419,573	364,704	346,408	-18,296	-5.0%

In the natural gas and oil program the FY 1998 DOE program seeks to address the high priority research needs identified by the oil and gas industry through the National Petroleum Council report “Research, Development, and Demonstration Needs of the Oil and Gas Industry,” and the Petroleum Technology Transfer Council report “Needs Assessment.” These studies consider the near and long-term needs of both upstream and downstream sectors based on their impact on business and their likelihood of not being met under a business as usual scenario.

Of the former Bureau of Mines programs transferred to Fossil Energy Research and Development in FY 1996, only the materials effort at Albany, Oregon will remain with DOE in FY 1998. The health and safety functions were transferred to the Department of Health and Human Services in FY 1997.

FY 1998 Budget Request

Coal

The FY 1998 request for coal is $100.0 million, a 3 percent reduction from the FY 1997 of $103.0 million. The major share of this funding will focus on developing progressively higher efficiency systems that significantly reduce CO_2 and exceed environmental compliance requirements through processes that prevent, rather than control, pollutant emissions. Also

funded in the Coal budget is the Advanced Clean Fuels program, which demonstrates advanced concepts for the clean production of coal-based transportation fuels, chemicals and other high value products that can compete with petroleum products at a cost of less than $25 per barrel in 1994 dollars. Also funded in the coal R&D budget is the Advanced Research Program, which fosters revolutionary innovations that could dramatically improve efficiencies, environmental performances, and the economics of advanced fossil fuel technologies.

Gas

The FY 1998 request for Gas is $103.0 million, a reduction of 14 percent from the FY 1997 level of $120.3 million. The budget will continue to place a strong emphasis on development of advanced high efficiency power generation cycles capable of utilizing both natural gas and coal resources and significantly reduce environmental emissions. In FY 1998, under the advanced turbine program, DOE will continue development of critical technologies, components and systems leading to the final prototype phase of high-efficiency, low NO_X "leap frog" gas turbine systems. Under the Fuel Cell Program, system and stack improvements and cost reductions through improved components, systems and new concepts will continue. The supply portion of the gas budget, $25.3 million, will continue to focus on advanced drilling, completion, stimulation, and reservoir characterization technology and resource assessment methodology, storage technologies and engineering techniques, upgrading of low-BTU gas and conversion of natural gas to clean liquid transportation fuels and feedstocks, and environmental research and analysis.

Petroleum

The FY 1998 request for petroleum activities is $52.2 million, a fourteen percent increase from the FY 1997 level of $45.9 million, which reflected a 45 percent reduction from FY 1995. Funding is increased for Exploration and Production Supporting and Environmental Research. The Supporting Research program includes the development of advanced technologies for exploration, drilling, reservoir characterization, and extraction. The technologies are conveyed to industry users through an aggressive technology transfer program.

Mining R&D

The budget request for Mining R&D (transferred from Bureau of Mines) is $5.0 million. In FY 1998, the program will continue research focused on conservation of natural resources through extending the service life of materials and/or finding substitute materials and processing paths for those that are environmentally hazardous.

FY 1998 Performance Goals and Measures

Boosting the Nation's Production of Natural Gas and Oil

Improve the capability of the Nation's petroleum industry to produce additional supplies of secure, clean domestic natural gas and oil, increasing U.S. oil production by an average of 0.5 million barrels per day during the period 2001 - 2010, and increasing gas production by 3.7 Tcf per year by 2010.

FY 1998 success will be measured by:

- Demonstrating five advanced production enhancement technologies for shallow-shelf carbonate reservoirs, adding 27 million barrels of reserves by 2002; transfer of the technologies could increase the impact by many times.
- Developing and transferring to industry six new technologies to characterize the heterogeneity in naturally fractured reservoirs that will contribute toward increasing gas production by 2.3 Tcf per year by 2010.
- Completing work in four States to establish variances for oil and gas injection wells in areas of low environmental risk, and implement risk-based data management systems for improved regulatory decision making in ten States, towards overall program objective to reduce cumulative industry compliance costs by $16.0 billion by 2010.

Developing the Clean, High Efficiency Power Plant for the 21st Century

Provide the Nation's electric power industry from 2000 to 2010 with a new generation of natural gas and coal power technologies that progressively reduce CO_2 emissions by 30 to 50 percent, lower SO_2 and NO_X emissions to as little as 1/10th the levels mandated by current Federal standards, and produce electricity at costs 10 to 20 percent below today's conventional plants.

FY 1998 success will be measured by:

- Enabling private sector manufacturing of fuel cells to proceed by completing the scheduled test runs of the first complete natural gas fueled solid oxide fuel cell power plant, and continuing the product improvement and cost reduction of molten carbonate fuel cell power plants leading to 60 percent efficient systems that will be market-ready in the 2000 time frame and capable of achieving competitive costs in distributed power generation.
- Completing Phase III Advanced Turbine System technology readiness testing for utility-scale turbines, and initiating Phase IV which will lead to prototype tests of a 60 percent efficient, ultra-low NO_X advanced gas turbine system in the 2000 time frame.
- Completing milestones at the Wilsonville, AL, Power Systems Development Facility (PSDF), the Nation's premier advanced power test facility, leading to development of advanced integrated gasification combined cycle (IGCC) and pressurized fluidized bed combustion (PFBC) systems with efficiencies of up to 60 percent, 30-50 percent lower carbon dioxide emissions, and up to 20 percent lower costs of electricity.

Highlights of Program Changes ($ in millions)

Advanced Pulverized Coal-Fired Power Plant Program *(FY 1997: $9.5, FY 1998: $5.5)* **-$4.0**

Eliminates additional funding added by Congress in FY 1997. FY 1998 request stretches the Department's schedule and will require down selection of contractors to a lead developer.

Advanced Turbine Program *(FY 1997: $46.6, FY 1998: $31.4)* **-$15.2**

Eliminates additional funding added by Congress. FY 1998 schedule will be stretched out and a lead developer will be identified.

Fuel Cells *(FY 1997: $50.1, FY 1998: $46.3)* **-$3.8**

Decreased funding will result in stretch out of solid oxide and molten carbonate fuel cell program.

Petroleum *(FY 1997 $45.9, FY 1998: $52.2)* **+$6.3**

Increased funding for oil technology programs in exploration and production supporting research and environmental research to address research needs identified by industry that would partially offset the 45 percent reduction in this program since FY 1995.

Program Direction *(FY 1997: $68.7, FY 1998: $62.8)* **-$5.9**

Lower level of contractual support as a result of the consolidation of the Energy Technology Centers into a single Federal Energy Technology Center.

Naval Petroleum & Oil Shale Reserves

Mission

The Naval Petroleum and Oil Shale Reserve's mission is to manage, operate, protect, maintain and produce the gas and oil from the Reserves in order to achieve the greatest value and benefits to the United States with consideration of the interests of joint owners.

Program Overview

The Defense Authorization Act, Public Law 104-106, requires the sale of Elk Hills, Reserve number 1, located in Bakersfield, California no later than February 10, 1998. The Act requires that five independent experts in the valuation of oil and gas fields be retained to conduct separate assessments of the value of the Government's interests in the field, as well as one independent petroleum engineer to prepare a reserve report and one petroleum engineer to finalize equity with Chevron. Administration of the sale shall be performed by an investment banker or equivalent financial advisor.

Section 3416 of Public Law 104-106 requires the Secretary of Energy to conduct a study to determine which of four options regarding the naval petroleum reserves other than Elk Hills would maximize the value of the reserves to the United States. The Secretary's recommendation will be submitted to Congress in early 1997.

The Act also requires that production be maintained at the maximum daily oil or gas rate which will permit maximum economic development until the sale is completed.

Budget Overview

The FY 1998 budget request for the Naval Petroleum and Oil Shale Reserves of $117.0 million provides for continued operations of the reserve until sale and asset transfer is completed. Based on the schedule for conducting the sale established by P.L. 104-106, the budget request provides funding for seven and one-half months of operations for NPR-1, including a transition period and full year funding for NPR-3 and the NOSRs. Available current and prior year funds will be invested in the current year to conduct sale activities.

	FY 1996 Comparable Appropriation	FY 1997 Comparable Appropriation	FY 1998 Request	FY 1997 vs. FY 1998	
Naval Petroleum & Oil Shale Reserves	148,433	143,786	117,000	-26,786	-18.6%

Budget Request

Elk Hills

The FY 1998 budget request for Elk Hills provides for continued operation, maintenance and regulatory compliance (environment and safety) while the provisions of the National Defense Authorization Act for Fiscal Year 1996 are being implemented. Capital investment activities have been reduced to a minimum to help maintain production and the value of the assets pending the outcome of the sales effort. The FY 1998 budget provides for a level of effort which assumes continued Government operations for seven and one-half months of the fiscal year.

Casper

The FY 1998 budget request for Casper, NPR-3 provides funds to operate and produce the field to maximize profitability while executing the storage agreements with the Veterans Administration and the General Services Administration.

Revenues

Operation of the reserves generates revenues for the Federal Government from the sale of petroleum and related products, sale of excess electricity from the cogeneration facility in Elk Hills, and reimbursement from Chevron for its share of costs at Naval Petroleum Reserve No. 1. Revenues are deposited in the Miscellaneous Receipts account at the U.S. Treasury and are estimated to be $175.0 million in FY 1998, (FY 1996 actual $419.0 million, and FY 1997 estimate $444.0 million).

FY 1998 Performance Goals and Measures

Maximizing the Value of Federal Oil Lands by management, operation, maintenance, and production of the Naval Petroleum and Oil Shale Reserves to achieve the greatest value and benefits to the Government with consideration of the interests of the joint owners. Carry out divestment actions pursuant to Public Law 104-106, National Defense Authorization Act for FY 1996.

FY 1998 success will be measured by:

- Producing 27 million barrels of oil and equivalent gas.
- Processing 102 million total gallons of natural gas liquids.
- Complete divestment actions at Elk Hills.

Highlights of Program Changes ($ in millions)

Naval Petroleum Reserve	-$26.8
❖ Decrease in operations and maintenance due to sale of NPR-1.	-18.2
❖ Elimination of development drilling at NPR-1 due to sale.	-17.0
❖ Increase in development facilities due to use of prior year balances and environmental requirements.	+15.6
❖ Increase in technology transfer activities at NPR-3.	+1.1
❖ No new requirements for development facilities at NPR-3.	-1.0
❖ Reduced gas well maintenance requirements at NOSRS due to lack of return of investment.	-0.2
❖ Program direction decrease due to completion of sale activities.	-14.8
❖ Use of prior year balances.	+7.7

Energy Conservation

Mission

The mission of the Office of Energy Efficiency and Renewable Energy is to work with our customers to lead the Nation to a stronger economy, a cleaner environment, and a more secure future by developing and deploying sustainable energy technologies that meet the needs of the public and the marketplace.

Program Overview

U.S. energy efficiency, as measured by energy consumption per dollar of gross domestic product remains well below that of Japan and Germany. Perhaps the best indicator of our Nation's need to become more energy efficient and develop alternative energy resources, is the current record high level of U.S. oil imports, 52 percent, which continues to grow and is projected to reach 63 percent by the year 2005. These imports contribute significantly to our trade deficit and threaten our economic security, as the Persian Gulf countries are projected to control over 70 percent of the global oil market by the year 2010.

To fulfill its mission, the Office of Energy Efficiency and Renewable Energy addresses four main energy usage areas: transportation; industrial; utility; and buildings technologies, including coordinated State and community energy programs. A separate office also manages the Federal Energy Management Program to assure public sector leadership in the application of energy efficiency and solar and renewable energy technologies. The Solar and Renewable Energy programs are funded under the Energy Supply Research and Development appropriations account in the Energy and Water Appropriations Bill and are discussed separately. The Energy Conservation programs are discussed here.

Transportation

The Transportation Sector programs support the development and commercialization of transportation technologies which have the potential to significantly reduce the projected U.S. and world demand for energy, particularly oil, and reduce the associated environmental impacts such as greenhouse gas emissions. The objectives are to improve vehicle fuel economy; and increase the production and use of cost-effective alternative transportation fuels. The program priorities reflect efforts towards demonstrating the doubling of light duty vehicle fuel economy in the near-term, 2001, and demonstrating the tripling of it in the mid-term, 2005-2010; the primary goal of the President's public Partnership for a New Generation of Vehicles (PNGV) initiative to develop pre-production prototype vehicles without compromises in safety, performance, or affordability.

Industry

In the Industrial Sector, adequate energy supplies at competitive prices have reduced energy concerns for most industries. However, for certain industries, these energy costs coupled with rising waste-related costs can be a significant threat to their competitiveness. To preserve

these domestic industries and reap economic and environmental benefits, the Industry Sector has initiated "Industries of the Future" partnership strategies with seven energy and waste intensive industries; the steel, aluminum, metal casting, chemical, refining, forest products, and the glass industries. These seven industries account for about 80 percent of all manufacturing energy use and 80 percent of the sectors' waste.

Buildings

In the Buildings Sector, energy consumption is roughly equal to that of the transportation and the industrial sectors. Dramatic building technology advancements have mitigated the increase in energy usage in this sector against a significantly larger increase in the number of households since 1970. Historically, these energy conservation opportunities have been hard to capture as: 1) buildings are often designed and built to the lowest first cost; 2) the eventual energy user is often not a decision maker in the building design; and 3) new buildings represent a small portion of the existing building stock. The Administration's Climate Change Action Plan (CCAP) offers cost-effective, voluntary solutions and incentives to stabilize and reduce the Nation's greenhouse gas emissions. The Office of Building Technologies, State and Community Programs has a dominant role in this initiative, as do other Energy Efficiency and Renewable Energy programs.

The Buildings Technologies programs are organized into three technical areas: 1) Building Systems Design which improves building performance as systems, and accelerates the deployment of new technologies and practices; 2) Building Equipment and Materials which develops improved equipment, appliances, components and materials; and 3) Codes and Standards which develops and implements energy efficiency standards for appliances, equipment, and complete buildings. Within the State and Local Partnership Program, the Weatherization Assistance Program provides cost-effective energy conservation services by partnering with State and local service organizations to perform energy audits and to weatherize low-income residences, particularly the homes of the elderly. The State Energy Program, which combined the State Energy Conservation Program and the Institutional Conservation Program, now allows States added flexibility through a consolidated grant program to deliver energy services and support market acceptance of energy efficiency technologies.

Budget Overview

The FY 1998 Congressional Budget Request of $707.7 million gross appropriation for the Energy Conservation appropriation reflects the program's priorities as described above. For the total Energy Efficiency and Renewable Energy program including both the Energy Conservation and Solar and Renewable energy activities, the FY 1998 request is $1,052.4 million (gross). The Energy Conservation portion increases approximately 24 percent over the FY 1997 enacted level. This increase results largely from continuing Administration support for Energy Conservation R&D, State energy program grants including the Weatherization Assistance Program, and high-priority Presidential initiatives such as the Partnership for a New Generation of Vehicles.

	FY 1996 Comparable Appropriation	FY 1997 Comparable Appropriation	FY 1998 Request	FY 1997 vs. FY 1998	
Energy Conservation					
Energy Conservation R&D					
Transportation sector	174,288	175,203	203,246	28,043	16.0%
Industry sector	114,369	117,566	139,559	21,993	18.7%
Federal energy management program	18,329	19,800	31,100	11,300	57.1%
Building technology, state and community sector - non-grants	76,810	81,198	111,315	30,117	37.1%
Policy and management	34,017	26,150	31,380	5,230	20.0%
Total, Energy conservation R&D	417,813	419,917	516,600	96,683	23.0%
Building technology, State, and community sector - grants	137,700	149,845	191,100	41,255	27.5%
Subtotal, Energy Conservation	555,513	569,762	707,700	137,938	24.2%
Use of prior year balances & other adjustments	-19,800	-20,000	-20,000	——	——
Total, Energy Conservation	535,713	549,762	687,700	137,938	25.1%

FY 1998 Budget Request

The gross FY 1998 Energy Conservation request of $707.7 million represents an increase of $137.9 million or 24 percent above the FY 1997 gross enacted level of $569.8 million, and re-affirms the Administration's commitment to energy conservation technologies and research. By the year 2005, Energy Efficiency programs are projected to save consumers and businesses over $10.0 billion per year and its industry sector programs are projected to save U.S. firms over $3.0 billion annually by the year 2000.

Two multi-agency Presidential initiatives account for major increases in Energy Conservation:

- the Partnership for a New Generation of Vehicles (PNGV) increases $18.3 million to $122.3 million; and
- the Energy Conservation portion of the Climate Change Action Plan (CCAP) increases $25.5 million to $65.3 million.

Other Administrative priorities with significant increases include: the Weatherization Assistance Program which increases $33.3 million to $154.1 million; the State Energy Program grants which increases $8.0 million to $37.0 million; the Federal Energy Management Program (FEMP) which increases $11.3 million to $31.1 million; and "Industries of the Future" public-private partnership efforts which increases $9.4 million to $55.7 million.

FY 1998 Performance Goals and Measures

Transferring Proven Energy Efficiency Measures

Apply energy efficiency measures to current buildings and operations to increase efficiency and reduce government energy consumption by 30 percent by 2005. Save low-income residents over $10.0 million and government $1.0 billion in annual energy costs reducing annual energy consumption by one quad of energy by the turn of the century.

FY 1998 success will be measured by:

- Changing renewable energy technologies from demonstrations to options in Federal facilities and applying several model Energy Savings Performance Contracts for use by all agencies to expedite private sector partnerships in financing and implementing energy and cost savings.
- Weatherizing approximately 80,000 low-income homes.

Designing and Delivering Cars of the Future

Lead the design team, of the multi-agency and industry Partnerships for a New Generation Vehicle, with the goal of developing an 80 mile-per-gallon family car and demonstrate a prototype car of the further by 2004.

FY 1998 success will be measured by:

- Demonstrating a no compromise 50 mpg laboratory prototype family vehicle.
- Expanding the Clean Cities program to more than 60 participating communities.

Implementing the Climate Change Action Plan

Support the President's Climate Change Action Plan to reduce carbon emissions by over 15 million metric tons, produce $5.0 billion in energy savings.

FY 1998 success will be measured by:

- Partnering with more than 2000 voluntary organizations to reduce Greenhouse Gases.
- Taking over 4 million tons of carbon out of the waste stream saving business and industry over $1.0 billion.

Improving Efficiency in Energy Intensive Industries

Work with the most energy-intensive industries to focus cooperative research and improve U.S. competitiveness resulting in over $20.0 billion of industry energy cost savings by the year 2000.

FY 1998 success will be measured by:

- Savings from the vision roadmaps in 1997 will begin to accrue to the annual consumer and industry, ultimately saving more than $1.0 billion.

Developing the Buildings and Communities for the 21st Century

Work with building community leaders and customers to develop and implement a strategic vision, roadmap to cut builder costs by 10 percent, consumer costs by 20 percent, pollution by 30 percent, saving 3 quads of energy, and reducing environmental wastes by 60 MMTCE tons by the year 2010.

FY 1998 success will be measured by:

- Creating the first building vision, developing a draft roadmap, and establishing trade, building and climate teams.

- Establishing a sustainable communities network of 25 cities.

Highlights of Program Changes ($ in millions)

Transportation Sector *(FY 1997: $175.2, FY 1998: $203.2)* **+$28.0**

The majority of the increases are for PNGV activities which increase +$18.3 to $122.3 mainly in the areas of: Vehicle Systems R&D (+$12.9), as industry teams, led with the support of the Big-3 domestic automakers, develop and integrate hybrid propulsion systems into "mule" test vehicles to double the current fuel economy; and Fuel Cell R&D (+$8.4), supporting PNGV's longer-term goals. In Non-PNGV areas, which total +$9.7 million, includes decreases in Automotive Materials (-$2.9), and Heavy Vehicle Alternative Fuels R&D (-$3.5), fund opportunities in Heavy Vehicle Systems R&D (+$2.0) on advanced diesel engines, and Technology Deployment activities (+$6.2) supporting voluntary Clean Cities programs and other alternatively fueled vehicle deployment activities addressing infrastructure development, systems, and safety-related issues.

Industrial Sector *(FY 1997: $117.6, FY 1998: $139.6)* **+$22.0**

Increases cost-effective CCAP-related activities for Motor Challenge (+$2.1) , ClimateWise (+$2.8), Industrial Assessment Centers (+$1.1), and NICE3 (National Industrial Competitiveness through Energy, Environment and Economics) partnerships (+$6.2). Other increases essentially provide funding for the seven public-private partnerships in the "Industry Vision of Future" strategies (+$9.4), each in the one to two million dollar range. Support for the Advanced Turbine Systems (ATS) program and advanced materials R&D efforts including ceramics activities are maintained (+$0).

Building Technology, State and Community Sector *(FY 1997: $231.0, FY 1998: $302.4)* **+$71.4**

Non-grants (+$30.1): Climate Change Action Plan (CCAP) related activities including Rebuild America efficient and affordable housing, industrialized housing, Energy Star appliances, and enhanced building codes and standards activities with States increase $12.4. Other increases include enhanced research and development efforts for advanced building equipment, materials, windows, and lighting (+$16.0). Grants (+$41.3): Grant funding for the Weatherization Assistance Program and the State Energy Programs increase $33.3 to $154.1 and $8.0 to $37.0, respectively, reflecting the continued support of the Administration. Finally, program direction, evaluation and planning activities are increased $1.7 commensurate with base program increases and allow cost of living adjustments for salaries.

Federal Energy Management Program (FEMP) *(FY 1997: $19.8, FY 1998: $31.1)* **+$11.3**

Increases support growth in alternate, non-Federal financing for energy projects at Federal facilities (+$5.7), and direct technical guidance, assistance, and training (+$3.1). In addition, interagency coordination efforts Nationally supporting Regional Energy Action Project teams and the development of software tools increase $2.2. Contractual support services increase commensurate with base program, and salaries are provided cost of living adjustments (+$0.3).

Policy and Management *(FY 1997: $26.2, FY 1998: $31.4)* **+$5.2**

Salaries and contractual services at Headquarters, the Golden Field Office, and the Region Support Office increase 15 percent or +$3.4 from FY 1997 as an FY 1997 offset utilizing unobligated carryover is no longer available in FY 1998. The FY 1998 request is still below FY 1996 actual obligations for those activities. International Market Development and Information programs are increased slightly from FY 1997 responding to needs and opportunities, with increases of $0.3 and $1.5 respectively.

Economic Regulation

Mission

Offices financed in the Economic Regulatory Administration appropriation are undergoing changes in their mission resulting in significant reductions in their activity related to Petroleum Overcharge and related legislation. The Compliance activity organized within the Office of General Counsel has declined to a level which requires no new appropriations. Prior year balances are adequate to finance shutdown activity. The follow-on regulatory activities administered in the Office of Hearings and Appeals lag the Compliance activity. As a result, appropriations will continue to be necessary in FY 1998.

Program Overview

Office of General Counsel (Compliance)

This program administers the enforcement activities resulting from a wide spectrum of oil pricing and allocation regulations that governed the petroleum industry throughout most of the 1970's. The program currently consists of litigating and negotiating settlements of those cases previously developed, of which approximately ten still remain unresolved.

Hearings and Appeals

The Office of Hearings and Appeals (OHA) is responsible for all of the Department's adjudicatory processes other than those administered by the Federal Energy Regulatory Commission. OHA's enforcement work is nearly concluded. However, OHA continues to conduct refund proceedings that return petroleum overcharge funds that are collected by the Department to parties who were injured by those overcharges, and to the States and Federal government for indirect restitution.

Over the years, OHA has gained jurisdiction over a wide variety of other matters including: Freedom of Information Act and Privacy Act Appeals, evidentiary hearings to determine an employee's eligibility for a security clearance, and requests for exception from DOE regulations and orders, such as reporting requirements to the Energy Information Administration. Funding for this activity is being sought in Energy and Water Development appropriations.

Budget Overview

Office of General Counsel (Compliance)

The FY 1998 request of $0.0 indicates the near completion of this program. Shutdown activities in FY 1997 will be financed with prior year funds. And any remaining activity will be handled by residual staff within the Office of General Counsel.

	FY 1996 Comparable Appropriation	FY 1997 Comparable Appropriation	FY 1998 Request	FY 1997 vs. FY 1998	
Economic Regulation					
Economic regulatory administration/Compliance	3,616	——	——	——	——
Office of hearings and appeals	2,666	2,725	2,725	——	——
Total, Economic Regulation	6,282	2,725	2,725	——	——

Office of Hearings and Appeals

The budget request of $2.7 million is limited to funding to process and resolve applications for refund requests and related activity arising from the regulatory program initiated under the Emergency Petroleum Allocation Act of 1973. Excess monies from refund processing are transferred to the Treasury Department for deficit reduction.

FY 1998 Budget Request

Office of Hearings and Appeals is seeking $2.7 million of new authority to conduct its regulatory program. Most expenses are related to its professional staff with Personnel Compensation and Benefits expenses equal to $2.0 million, travel expenses equal to $5K, and Support Services equal to $0.7 million. Support services are primarily provided within the Department's Working Capital Fund, and include rent, supplies, printing and communication and information technology.

FY 1998 Goals and Performance Measures

The Office of Hearings and Appeals expects to resolve 2,700 refund cases and hopes to commence making final payments to successful crude oil applicants in FY 1998. This assumes DOE concludes all enforcement proceedings so Hearings will know how much will be available for distribution.

Highlights of Program Changes ($ in millions)

Office of Hearings and Appeals *(FY 1997: $2.7, FY 1998: $2.7)* —

Increase due to inflation offset by employee reductions.

Strategic Petroleum Reserve

Mission

The mission of the Strategic Petroleum Reserve (SPR) is to reduce U.S. vulnerability to economic, National security, and foreign policy consequences of petroleum supply interruptions. This is accomplished by discouraging supply disruptions as a tool of other nations, and by adding to crude oil supplies in the United States, in the event of a disruption due either to political, military or natural causes.

Program Overview

The program requires that each SPR site and terminal be capable of transitioning from operational readiness to full drawdown within 15 days. The SPR maintains a continual readiness posture through its programs, initiatives and tests. The SPR facilities and systems have been designed and constructed to achieve high levels of both reliability and availability. The SPR has implemented a Life Extension Program that will maintain its high reliability and availability and extend the life of the Reserve through the year 2025. The Life Extension Program will also result in a streamlining of site configurations and standardization of equipment across the Reserve. Continued deterioration of cap rock and salt at the Weeks Island, Louisiana, storage facility has compromised the integrity of the mine. The relocation of the Weeks Island oil inventory to the Big Hill, Texas, and Bayou Choctaw, Louisiana, sites started in November, 1995 and was virtually completed in January, 1997. The site is now being backfilled with brine to ensure long-term mine stability. When the National Environmental Protection Act (NEPA) process is complete, the site will be decommissioned. The decommissioning process is expected to take three to four years. Following the decommissioning, the program will maintain a 680 million barrel capacity at the four remaining sites.

Budget Overview

The FY 1998 budget request of $209.0 million provides for storage site maintenance, security, drawdown testing, and drawdown readiness; and oil degassing; continues the long term replacement of critical physical systems to assure the capability of the SPR to effectively perform its mission through the year 2025; and decommissioning of the Weeks Island storage facility. There is no oil acquisition planned in FY 1998; only payment of fixed terminaling costs which maintains capability for crude oil fill operations.

	FY 1996 Comparable Appropriation	FY 1997 Comparable Appropriation	FY 1998 Request	FY 1997 vs. FY 1998	
Strategic Petroleum Reserve					
SPR - Facilities development	284,114	220,000	209,000	-11,000	-5.0%
SPR petroleum account					
Transfer of PY balances from the petroleum acct	-187,000	——	——	——	——
Proceeds from sale of Weeks Island Oil, SPR decommissioning	-97,114	——	——	——	——
Proceeds from SPR oil sales, SPR operating account	——	-220,000	——	220,000	100.0%
Total, Strategic Petroleum Reserve	——	——	209,000	209,000	——

FY 1998 Budget Request

The FY 1998 budget request for the SPR is $209.0 million, which is $11.0 million lower than the FY 1997 appropriation of $220.0 million. This reduction reflects the program's successes in resolving gas-in-oil problems, mitigating and decommissioning Weeks Island on schedule and within budget, and achieving streamlining savings by reversing facility obsolescence through Life Extension Program investments, organizational and process re-engineering, and increased use of information systems technology.

The FY 1998 budget maintains operational readiness and facilities maintenance activities consistent with Level I performance criteria; continues the Drawdown Readiness Program and performs annual exercises; continues the environmental safety and health (ES&H) program; and continues the management of the SPR program. Major objectives for FY 1998: continue the degasifying program to add 39 million barrels to the available inventory; continue stabilizing Weeks Island by adding brine; continue oil recovery skimming operations at Weeks Island; continue the Life Extension Program to provide long term program reliability, efficiency, and economy; and continue process re-engineering initiatives.

Since FY 1993, $420.4 million has been transferred from the SPR Petroleum Account to finance SPR operations and for other purposes leaving a balance of approximately $33.0 million. This balance will be used to continue drawdown and distribution readiness and to pay for the incremental costs of drawdown in the event of an energy emergency.

FY 1998 Performance Goals and Measures

Balancing U.S. Vulnerability to Energy Supply Disruptions

Ensure by the year 2000 the readiness of the Strategic Petroleum Reserve (SPR) to drawdown its inventory of crude oil at a maximum rate of 4.4 million barrels (MMB)/day within 15 days of direction from the President.

- Degasifying an additional 39 MMB of inventory to increase oil available for drawdown to 563 MMB (total SPR inventory).
- Increasing drawdown capability to 4.0 MMB per day.
- Increasing 90 day distribution capability to 333 MMB.

- Initiating an additional 11 percent of the infrastructure life extension program, thereby bringing program implementation to approximately 84 percent.
- Performing 5 drawdown readiness exercises.
- Providing 61 days of net import protection to the U.S. economy.

Highlights of Program Changes ($ in millions)

Strategic Petroleum Reserve	**-$11.0**
❖ Reduction in level of activities for resolution of gas-in-oil problems.	-3.3
❖ Reduction in level of activities for Weeks Island mitigation and decommissioning.	-7.4
❖ Increase in level of the Life Extension Program (LEP) activities to extend the life of systems such as pipelines, valves and pumping equipment. Completion of the LEP by the year 2000 will assure the capability of the SPR to effectively perform its mission through the year 2025.	+15.1
❖ Operational savings associated with streamlining.	-15.4
❖ Reduction in oil sales to finance program operations.	-220.0
❖ Increase in new budget authority	+220.0

Energy Information Administration

Mission

To be the Nation's primary source of comprehensive energy information, providing high quality energy data, analyses and forecasts to customers in Government, industry and the public in a manner that promotes sound policy making, efficient markets and public understanding.

Program Overview

As an independent statistical/analytical agency, the Energy Information Administration (EIA) has two primary roles. The first role is to conduct functions required by statute. This consists of the development and maintenance of a comprehensive energy database and publication of reports and analyses for a wide variety of customers and specific reports which are required by law. Second, EIA satisfies inquiries for energy information, from policy makers primarily in the Department and the Congress and from other Government entities, the energy industry and the general public. To fulfill these roles, EIA collects, analyzes, and disseminates information on energy reserves, production, consumption, distribution, prices, technology and related international, economic and financial markets.

Budget Overview

The FY 1998 total program is $67.8 million, comprised of $62.8 million in direct appropriations and $5.0 million in activities to be conducted with funds transferred from the Office of Energy Efficiency and Renewable Energy (EE). This level of funding is a decrease from the FY 1997 total program of $70.9 million, which was comprised of $66.1 million in direct appropriations and $4.8 million of funds transferred from the Office of Energy Efficiency and Renewable Energy. These funds are required to support the core EIA data and modeling activities needed to set energy efficiency program needs and measure program results. Included are the following programs: efficiency and renewable data collection and analysis; end-use energy consumption surveys; greenhouse gas data collection studies; mid-term energy demand modeling; and integrated end-use energy data compilation.

	FY 1996 Comparable Appropriation	FY 1997 Comparable Appropriation	FY 1998 Request	FY 1997 vs. FY 1998	
Energy Information Administration					
National energy information system	72,263	66,120	62,800	-3,320	-5.0%

The most significant change to the core EIA program in FY 1998 will be the addition of analysis and data collection in response to electric industry restructuring. By FY 1998, the depth and scope of EIA's traditional energy program will be significantly altered. These reductions include: elimination or reduction in the scope of several publications; elimination or reduced frequency of data collections; elimination of in-house mainframe computer; and changing the Residential Energy Consumption Survey from a triennial to a quadrennial basis.

FY 1998 Budget Request

In FY 1998, EIA will produce approximately 240 reports and analyses covering a wide variety of energy issues. EIA will respond to about 300,000 inquiries and requests for energy information.

Oil and Gas *($9.4 million)*

EIA will continue to collect and publish weekly, monthly and annual statistics on the supply of crude oil and refined petroleum products and data on crude oil and petroleum sales and prices. The program will produce annual data series on reserves and production of crude oil and natural gas.

Coal, Nuclear, Electric and Alternative Fuels *($3.8 million [$3.2 direct appropriations, $0.6 transferred from EE])*

EIA will collect and publish coal, electric, nuclear and renewable energy information, statistics and short term forecasts. In addition, surveys will be updated to incorporate data on electric industry restructuring. Seventeen percent of this program will be accomplished with funds transferred from Energy Efficiency and Renewable Energy (EE).

Energy Markets and End Use *($3.8 million, [$0.9 direct appropriations, $2.9 transferred from EE])*

The budget supports the preparation of monthly and annual integrated energy statistical publications. EIA will collect and publish information on international energy markets; produce baseline short-term energy forecasts and conduct residential, commercial, and manufacturing energy consumption surveys. 77 percent of this program will be accomplished with funds transferred from EE.

Integrated Analysis and Forecasting *($2.3 million, [$1.6 direct appropriations, $0.7 transferred from EE])*

This program will maintain the National Energy Modeling System used for mid-term energy supply and demand projections and policy analysis and collect data and conduct analyses of greenhouse gas emissions. 30 percent of this program will be accomplished with funds transferred from EE.

ADP Services *($5.5 million, [$4.8 direct appropriations, $0.7 transferred from EE])*

These funds will be used to operate EIA computer facility. 14 percent of this program will be accomplished with funds transferred from EE.

Information Services *($0.6 million)*

Operation of the National Energy Information Center to respond to public inquiries and provide publication support and dissemination activities for EIA products will continue.

Statistical Standards *($0.6 million)*

This program will develop and maintain statistical integrity and monitor EIA's conformance with standards.

Program Direction *($41.8 million)*

Provide salaries and benefits, travel, and training for 374 FTEs and funds EIA's share of costs to the working capital fund.

FY 1998 Performance Goals and Measures

Ensure data and analyses are of high quality and relevant to the needs of customers.

FY 1998 success will be measured by:

- Increasing the number of customers very satisfied with the accuracy of data to 60 percent by 2002.
- Increasing the number of customers very satisfied with the relevance of data and analyses to 70 percent by 2002.
- Increasing citations of EIA information in the media by 10 percent each year through 2002.
- Increasing the unique daily users of EIA's Internet site by 25 percent each year through 2002.

Provide fast and easy access to public energy information.

FY 1998 success will be measured by:

- Increasing the number of customers satisfied with the timeliness of data to 80 percent by 2002.
- Increasing the number of customers satisfied with the ease of access to data to 70 percent by 2002.

Highlights of Program Changes ($ in millions)

Oil and Gas *(FY 1997: $10.4, FY 1998: $9.4)* **-$1.0**

Decreases due to the elimination of annual surveys in the Petroleum Supply Annual, reduced sample sizes for certain oil and gas surveys.

Coal, Nuclear, Electric and Alternative Fuels *(FY 1997: $3.4, FY 1998: $3.2)* **-$0.2**

Decreases due to the reduction of coal and nuclear industry analysis.

Energy Markets and End Use *(FY 1997: $1.2, FY 1998: $0.9)* **-$0.3**

Decreases due to changing the time frame for the Residential Energy Consumption Survey to a quadrennial basis.

ADP Services *(FY 1997: $6.9, FY 1998: $4.7)* **-$2.2**

Decreases due to the elimination of the in-house mainframe computer.

Clean Coal Technology

Mission

The Clean Coal Technology Program is a technology development effort jointly funded by Government and industry to demonstrate the most promising advanced coal-based technologies for using coal cleanly, efficiently (reducing CO_2 emissions) and cheaply to meet our domestic energy needs and to generate the data needed for the marketplace to judge their commercial potential, with the most promising technologies being moved into the domestic and international marketplace. Underlying this objective is the recognition that the vast, and relatively inexpensive U.S. coal reserves represent a critical energy resource which can provide a significant economic advantage to the Nation. However, these benefits can only be realized when coal can be used in ways which are environmentally responsible and when advanced technology can achieve significantly higher efficiencies than existing commercial power plants.

Program Overview

The program began in 1985 with the objective of accelerating the pace at which advanced coal-based utilization technologies would enter commercial service. The program is of limited duration entailing five rounds of competition. Industry, by law must fund at least 50 percent of each project. Today, the five rounds have been awarded and the average industry cost share is 66 percent of the program's $5.9 billion in funding. Most of the projects from the early rounds have been completed and several are being used to meet Clean Air Act requirements. The more complex power generating systems are moving into construction and operation. These technologies will be ready for repowering or greenfield applications in the 2000-2010 time-frame. The technologies being demonstrated in the Program are grouped into four primary market applications: Advanced Electric Power Generation Systems, which offer the prospect of much higher efficiency coal-based power plants to meet the energy demand requirement of the Nation well into the next century; Environmental Control Devices, which offer more attractive ways to reduce emissions for existing powerplants and industrial facilities both domestically and in international markets; Coal processing for Clean Fuels, which offers coal feedstock conversion to produce a stable fuel of high energy density that can be used to produce steam electricity, or that can be used as a transportation fuel; and Industrial Applications, which offer superior ways to competitively manufacture key commodities such as steel in an environmentally responsive manner.

Budget Overview

The Clean Coal Technology program operates in FY 1998 with previously appropriated funding. The Administration's policy calls for limiting the program to existing projects currently under contract. Thus, if there are reduced programmatic requirements, funds can be rescinded.

	FY 1996 Comparable Appropriation	FY 1997 Comparable Appropriation	FY 1998 Request	FY 1997 vs. FY 1998	
Clean Coal Technology					
Advance appropriation - round 4	——	32,000	——	-32,000	-100.0%
Advance appropriation - round 5	——	255,879	——	-255,879	-100.0%
Advance appropriation	146,744	-150,000	——	150,000	100.0%
Rescission	——	-123,000	-153,000	-30,000	-24.4%
Deferral of prior year balances	——	——	-133,000	-133,000	——
Total, Clean Coal Technology	146,744	14,879	-286,000	-300,879	-2022.2%

FY 1998 Budget Request

The Department is proposing to rescind $153.0 million from unobligated balances in FY 1998 and to defer an additional $133.0 million in balances until FY 1999. The proposed rescission would reduce the total amount appropriated from $2.4 billion to $2.3 billion. The sources of funding for these proposals are funds available from canceled and restructured projects. At the end of FY 1998, 24 projects are expected to be completed with two additional projects finalizing reporting requirements. Seven projects are expected to be in operation and seven projects in design or construction. At the end of FY 1998, four projects are expected to have outstanding obligation commitments. Finally, an advance appropriation of $50.0 million is requested for FY 1999 to initiate support of an international clean coal technology program. The project will apply U.S. integrated coal gasification combined cycle technology in the People's Republic of China to introduce advanced, high efficiency, clean coal technology in the production of much needed electricity. China's rapidly expanding economy depends on coal to supply about three-quarters of its total energy needs. Lastly, the budget proposed $15.9 million available from prior year balances for FY 1998 administrative oversight of the Clean Coal Technology Program.

FY 1998 Performance Goals and Measures

Developing the Clean, High Efficiency Power Plant for the 21st Century

Provide the Nation's electric power industry from 2000 to 2010 with a new generation of natural gas and coal power technologies that progressively reduce CO_2 emissions by 30 to 50 percent, lower SO_2 and NO_X emissions to as little as 1/10th the levels mandated by current Federal standards, and produce electricity at costs 10 to 20 percent below today's conventional plants.

FY 1998 success will be measured by:

- Continuing accomplishments in the Clean Coal Technology Demonstration Program, including:
  - Continuing operations of three full commercial-scale coal gasification-combined cycle facilities achieving 95 percent or greater SO_2 removal and NO_x reductions of at least 90 percent.
  - Continuing operations of commercial-scale Liquid-Phase Methanol (LPMEOH) facility capable of producing 260 tons/day of fuel methanol (97 percent purity by weight).

- Initiating the design of two commercial-scale Pressurized Fluidized Bed facilities capable of achieving SO_2 reductions of at least 95 percent and NO_x reductions of at least 80 percent.
- Commencing construction of a commercial-scale, coal-fired, direct reduction ironmaking facility which is capable of reducing NO_x emissions by 95 percent and SO_2 emissions by 90 percent over conventional coke oven and blast furnace technology.
- Completing operations of final coal processing facility which produces a coal product fuel with a sulfur content as low as 0.3 percent with a heating value up to 12,000 btu/lb.
- Commencing operations of a commercial-scale, advanced combustor facility for electrical power generation while achieving NO_x reductions of 70 percent or greater and SO_2 reductions of 90 percent or greater.

Highlights of Program Changes ($ in millions)

Clean Coal **-$301.0**

Change reflects the amount proposed for rescission (-$153.0) and deferral (-$133.0) for a total request of -$286.0 in FY 1998. The FY 1997 appropriation was $15.0.

Appendix A: Department of Energy FTE Request

	FY 1996 FTE Usage	FY 1997 FTE Request	FY 1998 FTE Request	FY 1997 vs. FY 1998	
Energy and Water Development					
Energy Supply R&D	1,118	2,001	1,928	-73	-3.6%
Uranium Enrichment	52	46	—	-46	-100.0%
Isotope Product & Distribution	10	10	10	—	—
General Science & Research	108	100	92	-8	-8.0%
Atomic Energy Defense Activities					
Weapons Activities	2,069	2,034	1,939	-95	-4.7%
Env Restoration & Waste Mgmt	3,214	3,168	2,997	-171	-5.4%
Bureau of Mines	—	29	29	—	—
Other Defense Programs	731	785	787	2	0.3%
Total, Atomic Energy Defense Activities	6,014	6,016	5,752	-264	-4.4%
Departmental Administration	2,655	1,447	1,319	-128	-8.8%
Inspector General	325	331	290	-41	-12.4%
Power Marketing Administrations					
Alaska Power Administration	26	32	11	-21	-65.6%
Bonnevile Power Administration	3,160	3,131	2,930	-201	-6.4%
Southeastern Power Admin	41	41	41	—	—
Southwestern Power Admin	185	193	189	-4	-2.1%
WAPA - Operation & Maint	1,138	1,168	1,168	—	—
WAPA - Col River Basin	191	161	161	—	—
Total, Power Marketing Administrations	4,741	4,726	4,500	-226	-4.8%
Federal Energy Regulatory Com	1,374	1,357	1,377	20	1.5%
Nuclear Waste Fund	248	232	206	-26	-11.2%
Total, Energy and Water Development	16,645	16,266	15,474	-792	-4.9%
Interior and Related Agencies					
Fossil Energy R&D	647	606	598	-8	-1.3%
Bureau of Mines	—	85	85	—	—
Naval Petrol & Oil Shale Reserves	78	72	40	-32	-44.4%
Energy Conservation	491	450	415	-35	-7.8%
Emergency Preparedness	8	—	—	—	—
Economic Regulation	82	54	24	-30	-55.6%
Strategic Petrol Reserve	149	143	137	-6	-4.2%
Energy Information Activities	442	417	374	-43	-10.3%
Clean Coal Technology	69	70	68	-2	-2.9%
Total, Interior and Related Agencies	1,966	1,897	1,741	-156	-8.2%
Total, Department of Energy	18,611	18,163	17,215	-948	-5.2%